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LAND ECONOMICS

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A New Approach to Forest Ownership Surveys

By A. A. HASEL* *and* ADON POLI**

FOREST land is acquired in many different ways and for many different reasons. Years ago, when our government was disposing of its land, much of it went into private ownership through grants, homesteads, mineral claims, and similar methods of acquisition. Some land, once public domain, was turned over to federal agencies such as the Forest Service, the National Park Service, and others, for administration. Because land was abundant and demand relatively low, little thought was given to the type of ownership pattern which the land grants and patented ownership holdings would produce. As a result, a checkerboard pattern of railroad land grants and irregular, scattered mineral claims are common characteristics of forest and range areas of the West. Much privately-owned forest and range land lies intermingled with land that is administered by public agencies. This adds materially to the difficulty of applying administrative policies of management to large areas of land.

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** Agricultural Economist, Bureau of Agricultural Economics, U. S. Department of Agriculture.

Now that public land is no longer subject to entry, the most common method of acquiring land is by purchase from other land owners. Involuntary acquisition through inheritance, gift, or foreclosure is another way of obtaining ownership. Owners who buy their land usually show greater interest in it than do those who get it by involuntary means. This is true because the person who selects and actually buys his land has some definite objective in mind, whereas one who acquires involuntarily usually has other more important interests and consequently gives less thought and time to his property.

Attitudes toward use of the land also differ. For example, a timber operator purchases land to cut the timber for lumber. His motive is purely economic. A city dweller, on the other hand, buys a similar tract for rest and recreation. The timber operator may criticize the city man because he does not cut his timber for profit, and the city dweller may deplore the way the timberman destroys the scenery by cutting the beautiful trees. Right of ownership has given each person the power to use his land

as he pleases, yet what pleases one owner may be in direct conflict with the desires of another. If to these two attitudes are added those of thousands of other owners, one can readily see how the job of administering land-use policies becomes difficult. And, before one can even attempt an intelligent job of developing and administering land-use policies of forest or any other type of land, he must know something about the people with whom he has to deal, how they acquired their land, for what purpose they acquired it, and how they are now using or intend to use it.

In arriving at this knowledge, pattern of ownership is a significant feature to study. Pattern involves size as well as type of ownership, and also the way in which certain sizes and types of ownership holdings are distributed or combined throughout an area. For example, a forest area in which small scattered ownerships predominate would require different treatment from an area in which holdings were rather uniform in size and well-blocked. Also, a pattern composed of scattered private ownerships intermingled with public ownerships of various classes would require different policies from one in which lands of all classes of owners were blocked into separate distinct administrative units. By determining the ownership pattern of an area it is possible to delineate sub-areas composed of ownerships with more or less homogeneous characteristics. Hence, policies in one sub-area may vary from those in another, but they may still convey a unified program for the entire area.

To get some factual information concerning the relation of land ownership to forest land management, a study was made of an area comprising about 1.4 million acres of forest, range, and farm-forest land in northern Mendocino County, California.[1] Despite a high proportion of commercial timber land (including a considerable acreage of valuable redwood timber) in the area, a complex pattern of ownership requiring special consideration in management programs was found to be a significant characteristic there.

Because of the interest to foresters and others in the information obtained from this study, the work was expanded to statewide coverage as part of the regular Forest Survey in California. The expansion made necessary a new method for obtaining land-ownership data quickly and inexpensively. This method is discussed here for the benefit of those who may want to consider its use in studies similar to the one described in this article.

The Forest Survey

The Nation-wide Forest Survey was authorized by Congress in 1928. Since then additional funds have been provided to complete the initial survey and to keep it current. Responsibility for the survey was assigned to the research branch of the U. S. Forest Service and its regional experiment stations. In California the Forest Survey is an activity of the Division of Forest Economics, California Forest and Range Experiment Station, Berkeley.

The survey has five main objectives: (1) to make an inventory of the extent, location, and condition of all forest lands, and the quantity, kinds, quality, and availability of the timber now on those lands; (2) to determine the rate of timber depletion through cutting, fire, insects, disease, and other causes; (3) to determine the present and probable future rate of timber growth and the productive capacity of the forest area; (4) to ascertain the present and probable future

[1] Adon Poli and Donald T. Griffith, *Forest Land Ownership in Northern Mendocino County, California.* Forest Survey Release No. 5, Calif. Forest and Range Experiment Station, Berkeley, June 1, 1948. 49 pp.

requirements for forest products by all classes of consumers; (5) to provide, by correlating these findings with one another and with other economic factors, a sound basis for formulating policies and plans of forest-land management and use.

Using aerial photographs, existing maps, sample plot measurements, and field observations, the Survey is gathering information as to type, age, density, volume, growth, and site-quality class for over 45 million acres of California timberland. The information thus obtained is placed on base maps, most of which cover 7½ minute quadrangles. Although the maps include agricultural and desert areas, the Survey is restricted to forest and farm-forest land. Acreage, volume, and related forest data are transferred from the maps and tally sheets to punch cards from which necessary tabulations are prepared by mechanical sorting.

The forest land-ownership study as part of the regular survey work in California was started in 1947, when the Forest Service entered into a cooperative agreement with the Bureau of Agricultural Economics. The major purpose of the cooperative arrangement was to enable a more detailed consideration of privately-owned forest land than had been possible previously.

The ownership study involves a determination of type of ownership and size of forest and farm-forest land holdings, and the relation of the ownership classes to land-management practices as indicated generally by the physical condition of the timber stands and of the forest land. All forest land included in the study is classified into 10 public and 10 private ownership classes. Privately-owned forest land and private land ownerships are distributed into 12 size classes. Supplementary information is obtained describing methods and purposes of acquisition and land use. The ownership study is closely integrated at each step with the inventory phase of the Forest Survey.

Ownership Survey Methods Generally Used

Land ownership surveys have generally involved tedious methods for obtaining factual data. The usual procedure has required the preparation of detailed maps showing actual boundaries of all the individual tracts or ownerships. These ownership maps are used with other maps to determine relationships between classes of ownership and physical features such as soils, crops, and forest cover. This requires considerable planimetering or estimating of land areas in the various classes of ownership. Preparing the maps and determining the land areas are slow, costly jobs.

These methods have been used successfully in intensive studies of land ownership dealing with small areas such as a county or part of a county. These methods are desirable also for certain specific purposes for which the mapping is essential in order to present visually the ownership pattern of an area. With plenty of funds and personnel available, some very satisfactory jobs have been turned out. But for forest land, particularly for the Forest Survey, a different procedure is needed, because the application of these methods to a large region involving millions of acres is too costly and impracticable.

The Sampling Approach

As a complete survey of ownerships could not be afforded, the only alternative was to rely on sampling to provide the needed information on number of owners and acreage in the different categories. In selecting the sampling method the usual question arose: What method of sampling will provide unbiased estimates of sufficient accuracy with the

least effort? Freedom from bias implies that the estimates are as likely to be high as low by a given amount. Whether the estimates are sufficiently accurate depends upon whether the expected limit of sampling error can be accepted without affecting major conclusions from the study.

The sampling method known as "line sampling" was adopted on the basis of results obtained from previous tests of the method by Hasel,[2] who divided rectangular areas into belts of uniform width and length, and made sample measurements on two randomly selected lines of equal length in each belt. Total acreage involved was known, and the proportion of total line length crossing any area-class, in this case type of vegetation, provided an estimate of the proportion of total area in the class. These estimates were found to be unbiased and the variability between line measurements through an area-class within belts provided valid estimates of sampling error;[3] in this case the sampling error corresponds to one standard error.

Osborne[4] compared random and systematic sample estimates and found that the sampling error for systematic sampling was much less than for random. Also, a method of estimating the sampling error of systematic samples was demonstrated. Accordingly, equal spacing of parallel lines was adopted in the present study.

While Hasel's and Osborne's tests of line sampling were made with map data, obviously the same estimates could be obtained without maps simply by marking intercepts of mappable classes along sampling lines. How this is done depends upon the kind of information being classified. Boundaries of vegetation types such as timber, brush, or grass can be determined easily by examination of aerial pictures. By use of planimetric-plotting devices the intercepts can be accurately marked on the sampling lines. Species make-up of timber, soil series, and soil-depth classes usually require traversing of lines on the ground. For ownership data, the intercepts of different ownerships are obtained from records in county plat books and each tract classified as to type of ownership and size from county records or other sources.

The need for an ownership sample that would give reliable conclusions with a minimum of effort and expense governed the spacing of lines that could be used in the California Survey. It was estimated that this would require taking data on approximately one-fourth of the ownerships and that lines spaced 2 miles apart would intercept about this fraction. A further requirement to be met was that the ownership phases of the survey keep pace with the timber inventory and mapping phases but still provide results sufficiently accurate to conform to acceptable standards. The survey was started on this intensity, and the present analysis was started to find out specifically: (1) the expected accuracy of estimates of area in various ownership classes using the 2-mile spacing of lines; (2) the accuracy of area estimates using 1-mile

[2] A. A. Hasel, "Estimation of Vegetation-Type Areas by Linear Measurement," *Journal of Forestry*, January 1941, pp. 34-40.

[3] Using two randomly selected lines in each belt,

$$(\text{S.D.})^2 = \frac{S(X_1 - X_2)^2}{n}$$

where

S.D. = standard deviation
S = sum over all belts
X_1, X_2 = the respective measurements obtained from the two lines in a belt
n = total number of lines measured

Then the sampling error of the mean, *S.E.* is

$$\text{S.E.} = \frac{\text{S.D.}}{\sqrt{n}}$$

[4] James G. Osborne, "Sampling Errors of Systematic and Random Surveys of Cover-Type Areas," *Journal American Statistical Association*, June 1942, pp. 256-264.

and 4-mile line spacings; and (3) a method of estimating the number of owners within ownership classes.

Data from the Mendocino County ownership study[5] were available to test the performance of the sampling methods. The area included 1,391,275 acres. The boundaries of all ownerships were shown on a one-half-inch-to-the-mile map and each ownership was classified as to type and acreage class. Private ownerships were classified in this completed study into (a) timber-operating company, (b) timber-holding company, (c) timber-operating individual, (d) timber-holding individual, (e) range-livestock farming company, (f) range-livestock farming individual, (g) other farmers, and (h) other nonfarmers. Owners were also grouped into 10 size-of-ownership classes.

In the present analysis, ownership types (b) ,(c), (d), and (g) and size classes 0 to 180 acres and 700 to 1,300 acres were selected as representative of the range of conditions that might affect sampling results.

Parallel east-west lines were drawn across the map at intervals scaling a mile. Along each line the distance intercepted by each ownership was scaled and recorded by ownership class and line position number. For the entire area the summary showed total line length, and line length and number of owners intercepted in each ownership class. The ratio of line length in a class to total line length multiplied by total acreage was taken as the estimate of acreage in the class.

Determining the sampling error of the area estimate was more difficult. The method is explained by Osborne[6] and will not be repeated here in detail.[7]

The estimate of number of owners in a class is needed, but usually a lower standard of accuracy can be tolerated than for the area estimate. The line sample itself does not provide all the data needed for estimating number of owners. The owners intercepted are not a random sample of the population. With equally spaced lines, the chance of intercepting a particular ownership depends upon its maximum north-south extent when sample lines run east-west. Therefore, the line sample will tend to intercept a higher proportion of large tracts than of small tracts. If lines are spaced a mile apart, a tract extending a mile or more north-south cannot be missed and therefore has a probability P of 1.00 of being intercepted. A tract extending one-half mile north-south has a 50-50 chance of being intercepted, or a probability of 0.50, and one of one-fourth mile north-south a probability of 0.25. In estimating the population number, the sample is expanded by multiplying each different ownership intercepted by the ratio $1/P$.

With the northern Mendocino County data a random sample of 10 owners was selected from all owners in each of the following size classes (acres): 0-15, 16-63, 64-143, 144-255, 256-399, 400-575, and 576-783. The intervals were equal in terms of square root of area. Each owner-

[5] Poli and Griffith, *op. cit.*, June 1, 1948.

[6] Osborne, *op. cit.*, June 1942.

[7] The procedure involves calculating the correlation coefficient between observations on successive lines, squaring this value, and plotting on semi-logarithmic paper over distance between lines. Likewise this may be done for alternate lines which are twice the unit distance apart. In addition, it is known that as the distance between lines approaches zero, the squared correlation coefficient (r^2) approaches unity. A straight line fit to these points then provides a basis for calculating the average r^2 for all possible lines within one-half the distance to adjacent sample lines. This average value of r^2, together with the residual mean square, s^2, from a curve fitted to line observations over line position measured from one end of the map, and the number of lines, n, provides the values needed for estimating sampling error. The expression for the sampling error, S_T, of the total line length intercepted, T, by a class is

$$S_T = \sqrt{ns^2(1-r^2)}$$

and $100\, S_T \div T$ = sampling error expressed as a percentage.

ship selected was then identified on a map and the maximum north-south extent was scaled. These values were then converted to sample expansion factors by dividing the proposed line spacing, say 80 chains, by the north-south extent in chains. These expansion factors were then averaged by area size classes and plotted over acreage. A smooth reverse J-shaped curve was then drawn as in Figure 1.

Ownerships intercepted by sampling lines were then expanded to the population estimate by applying the factors read from the appropriate curve in Figure 1.

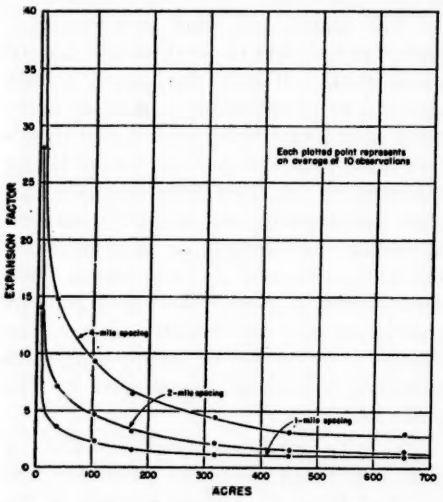

Figure 1. Expansion Factor by Size of Area Intercepted and Line Spacing.

Results of Sampling Tests

Area Estimates. Estimates of acreage for two of the ownership classes are shown in Table I for samples with line spacings of 1, 2, and 4 miles. Using the 1-mile spacing, the estimated acreage owned by timber-holding companies is 131,832 acres. The deviation from the known true acreage of 132,634 acres is 802 acres, or 0.61 percent low. The estimated sampling error (one standard error) is 2.21 percent, giving a t value[8] of:

$$t = \frac{0.61}{2.21} = 0.276$$

It is expected that approximately two-thirds of the values of t will be less than or equal to unity and 19/20 of the values will be less than or equal to two, for independent samples and using valid estimates of sampling error.

The estimated values of standard errors obtained from all samples were plotted over estimated acreage on logarithmic graph paper and straight lines fitted for each line-spacing used. There were 6 samples of 1-mile spacing, 12 samples of 2-mile spacing, and 24 samples of 4-mile spacing. These regression lines are shown in Figure 2.

For the 1-mile spacing sample, timber-holding company ownership class, the curved estimate of standard error is 3.3 percent, giving a t value of 0.185 as shown in Table I.

Samples of the same line-spacing may be treated as independent as the degree of correlation has been taken into account in estimating standard error. Samples of different line-spacing are not independent as the same lines are used. The two samples of 2-mile spacing and the four samples of 4-mile spacing include the same lines used in the 1-mile spacing. Therefore the comparison of actual with expected accuracy of estimates in Table II is confined to samples using the 4-mile spacing. The Chi-square[9] values indicate that the deviations from expectation are not greater than might reasonably be attributed to random variations. This is true both for the t values based on individual sample estimates and the curved estimates. The number of samples of 1- and 2-mile spacing are too few to

[8] *See* R. A. Fisher, *Statistical Methods for Research Workers*, 8th ed., chap. V, (Oliver A. Boyd, London, 1941), pp. 112-167.

[9] R. A. Fisher, *op. cit.*, 1941, see chap IV, pp. 76-111.

permit the Chi-square test, but correspondence with expectation was close for the samples taken. It appears, therefore, that the systematic line-sampling method provides estimates of area that are not biased and that the samples themselves provide adequate estimates of sampling error.

Number-of-Owner Estimates. Results from a sample using 2-mile spacing are given in Table III for an estimate of number of timber-holding individuals. The smallest size class used is 37-44 acres because no smaller acreages were intercepted in this classification. The largest size class is 1,600 acres, as the expansion factor becomes unity at this size. All different ownerships intercepted were recorded and classified as to size class, using county records of individual owners and information from other sources. Ownerships consisting of 2 or more separated tracts were treated as one. As shown in Table III, a frequency distribution by

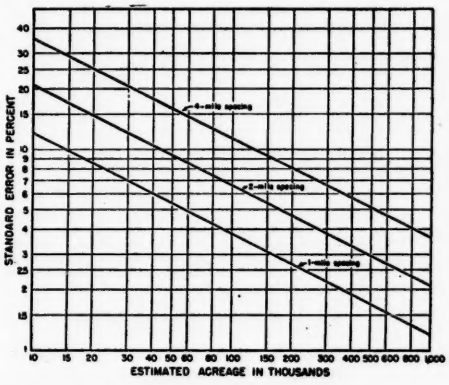

Figure 2. Expected Accuracy of Estimates of Area by Ownership Classes.

TABLE I—Observed Accuracy of Estimates of Acreage

Spacing of Lines (1)	Sample Number	Estimated Area (2)	Deviation from True Area (3)		Sample Standard Error (4)	t (5)	Curved Standard Error (6)	t (7)
Miles		*Acres*	*Acres*	%	%		%	
		Ownership Class—Timber Holding Company						
1	1	131,832	− 802	0.61	2.21	0.276	3.3	0.185
2	1	127,207	− 5,427	4.27	7.74	0.552	5.8	0.736
	2	136,668	+ 4,034	2.95	6.02	0.490	5.6	0.527
4	1	126,681	− 5,953	4.70	17.44	0.269	10.0	0.470
	2	126,471	− 6,163	4.87	20.23	0.241	10.0	0.487
	3	127,732	− 4,902	3.84	18.84	0.204	10.0	0.384
	4	146,551	+13,917	9.50	20.21	0.470	9.4	1.011
		Ownership Class—Farmers (Other than Range-Livestock Farmers)						
1	1	38,898	+ 4,318	11.10	6.43	1.726	6.1	1.820
2	1	36,270	+ 1,690	4.66	9.01	0.517	10.8	0.431
	2	41,526	+ 6,946	16.73	11.48	1.457	10.1	1.656
4	1	34,062	− 518	1.52	21.72	0.071	19.2	0.079
	2	48,885	+14,305	29.26	19.26	1.519	16.1	1.817
	3	38,372	+ 3,792	9.88	18.35	0.538	18.1	0.546
	4	34,377	− 203	0.59	21.11	0.028	19.0	0.031

1 Parallel, east-west lines across base map along which intercepts through different classes of ownership are marked.
2 Proportion of total line length in a class multiplied by total area sampled.
3 True acreage of timber-holding companies is 132,634, and of farmers other than range-livestock is 34,580.
4 Standard error estimate based on individual sample data.
5 Ratio of actual deviation in percentage to sample standard error.
6 Based on curves in Fig. 2.
7 Ratio of actual deviation in percentage to curved standard error.

TABLE II—Comparison of Actual With Expected Accuracy of Estimates of Area Based on 4-Mile Spacing of Lines

Range of Values of t(1)	Expected Frequency	Actual Frequency Based on Sample(2)	Chi-square (3)	Actual Frequency Based on Curve(4)	Chi-square (3)
$t \leq 0.319$.....	6	9	1.500	4	0.667
$0.319 < t \leq 0.674$.....	6	6	0.000	9	1.500
$0.674 < t < 1.150$.....	6	2	2.667	5	0.166
$t > 1.150$.....	6	7	0.166	6	0.000
	24	24	4.333	24	2.333

1 The value of t is the ratio of actual deviation in percentage to the estimated standard error.
2 Using standard errors computed from individual samples.
3 Actual minus expected frequency, squared, and divided by expected frequency.
4 Using standard errors read from Fig. 2.

size class was then made, and these frequencies converted to estimated population number by application of the factors from Figure 1. In this example, the estimated number of owners was 421, which is 11.4 percent over the known true number, 378.

Results for all samples and all types and size-classes sampled are given in Table IV. The 1- and 2-mile spacings of lines provided estimates that are considered sufficiently reliable for purposes of the present survey. Estimates in the "timber-operating individual" class are rough, but this is not important as average acreage and number of owners are small. Estimates are rough in the "other farmers" class also, but the total acreage involved is comparatively small. If it develops that better estimates are needed in such classes, further sampling would be required. The 4-mile spacing gives estimates that are not reliable within the 1,391,275-acre area sampled. On areas of 4 times this size, which is approximately the size of Forest Survey Subregions used in California, the sampling errors may be expected to decrease by one-half.

The results in Table IV provide a basis for judging the degree to which number-of-owner estimates may be relied upon.

TABLE III—Estimate of Number of Timber-Holding Individuals Based on a Line Sample Using a 2-Mile Spacing

Acres	Expansion Factor (1)	Number of Owners Intercepted	Estimated Number in Population(2)
37 – 44	7.0	1	7.0
45 – 54	6.6	1	6.6
55 – 64	6.2	1	6.2
65 – 74	5.8	0	0.0
75 – 84	5.4	5	27.0
85 – 94	5.1	1	5.1
95 – 104	4.8	0	0.0
105 – 114	4.6	0	0.0
115 – 124	4.4	3	13.2
125 – 134	4.2	0	0.0
135 – 144	4.0	2	8.0
145 – 154	3.8	6	22.8
155 – 164	3.6	37	133.2
165 – 174	3.4	2	6.8
175 – 184	3.3	1	3.3
185 – 199	3.1	6	18.6
200 – 214	2.9	5	14.5
215 – 234	2.7	0	0.0
235 – 259	2.6	3	7.8
260 – 299	2.3	8	18.4
300 – 349	2.0	16	32.0
350 – 399	1.7	8	13.6
400 – 449	1.6	8	12.8
450 – 499	1.5	3	4.5
500 – 799	1.4	17	23.8
800 – 999	1.3	9	11.7
1,000 – 1,299	1.2	8	9.6
1,300 – 1,599	1.1	6	6.6
1,600 +	1.0	8	8.0
Total			421

1 Read from Fig. 1.
2 Product of expansion factor and number of owners intercepted by line sample.

Summary and Conclusions

In connection with the ownership phase of the forest survey of California, which is under way as part of the nation-wide Forest Survey project, the line-sampling method was adopted for estimating acreage and number of owners by class of ownership.

Estimates of area are based on evenly-spaced, parallel lines drawn on base maps. Ownership intercepts are marked along these lines and the proportion of total line length traversing an ownership class is taken as the proportion of total acreage in the class. The acreage so obtained is an estimate of the true acreage and will tend to approach closer to the true acreage with decrease in distance between sampling lines and increase in the acreage that is involved. This relationship is shown graphically for the 1-, 2-, and 4-mile line spacings, showing the sampling errors that may be expected. Tests based on comparison of 42 sample estimates with the known true areas within 1⅓ million acres indicated that estimates were unbiased and the sample data provided an adequate basis for estimating sampling error.

It follows that within an ownership class the area breakdown by mappable strata can be estimated by a similar procedure. If the timber-stand strata are mapped it is necessary only to use a transparent overlay of the line-ownership data over the map and determine intercepts of stand strata within each ownership class. If a timber-stand map is not available, mapping can be confined to marking intercepts along the sampling lines.

Estimates of number of owners in a class require additional data to that provided by the line sample. From county records a random sample of owners is taken within size-class strata, sufficient to provide a smooth curve of sample expansion factors over acreage. For each owner included in the random sample, the expansion factor is taken as the ratio of distance between sampling lines to north-south extent of tract. These are averaged for all owners in a size class and plotted. Expansions factor curves are shown for 1-, 2-, and 4-mile line spacings. These curved expansion factors are then applied to number of owners intercepted on the line sample to estimate the population.

Tests of accuracy of number-of-owner estimates indicated that estimates ranged within 12 percent of the true number in the major ownership classes, using the 1- or 2-mile spacing. If classes containing

TABLE IV—Accuracy of Sample Estimates of Number of Owners

Ownership Class	True Number of Owners	Deviation of Sample Est. from the True No.						
		1-mi. Spacing	2-mi. Spacing Sample		4-mile Spacing Sample			
			1	2	1	2	3	4
		%	%	%	%	%	%	%
Timber-Holding Company	30	0	+10	0	+57	+ 3	− 7	+30
Timber-Operating Individual	21	+38	−19	+90	−43	+186	0	+ 1
Timber-Holding Individual	378	+ 5	+11	− 3	+22	−30	+ 5	+25
Other Farmers (1)	267 (2)	+19	− 6	+43	− 9	+66	− 5	+27
Less than 180 Acres	1,413 (3)	− 6	−12	+ 1	− 4	+4	−21	− 1
700 to 1,300 Acres	81	0	+12	+ 4	+35	+ 1	+35	+27

1 All except range-livestock farmers.
2 Small adjacent acreages too small to map individually were grouped, reducing the population from 279 to 267.
3 Grouping of areas too small to map reduced the number from 1,587 to 1,413. Some 1-acre tracts were mapped, but most of them were grouped.

a relatively small number of owners and small area are important, a closer spacing than one mile will be required, and in some surveys the advantage of sampling over complete survey will probably vanish.

In planning the ownership phase of the California forest survey, the 2-mile spacing of sampling lines was adopted on the basis that it would provide an adequate sample and the ownership data could be taken and compiled along these lines at the same rate that other phases of the forest survey progressed. This has been borne out subsequently in practice. The present study indicates that the accuracy of estimates obtained will be adequate for the purpose intended in that major conclusions will not differ from those based on complete inventory.

If, in the course of the survey, important localized situations warrant closer estimates, additional lines will be plugged in. Trends of ownership changes in the future will be measured by again sampling along the same lines.

Work completed on eight million acres indicates that the cost of data collection is reduced to less than one-fourth that required by the usual procedure of complete inventory. This indicates that in other ownership surveys and perhaps even in studies of land utilization, consideration should be given to the maximum limits of error that can be tolerated without changing major conclusions from such studies, and that the possibility of sampling be given careful consideration.

The Land—TVA—and the Fertilizer Industry

By NORMAN WENGERT*

IT is curious that so little attention has been directed to the relationships of fertilizer and the fertilizer industry to problems of land economics. The explanation of this neglect is not simple. It may in part lie in the fact that the American fertilizer industry developed largely in the South where soil mineral deficiencies first became apparent, while northern and western regions still offered virgin lands to new settlers. It may in part also lie in the fact that, except where it has made good advertising copy, the fertilizer industry has not been greatly concerned with problems of land economics, land use and soil fertility. And until quite recently the industry was the dominant influence in education and research in the field of fertilizers.

It is the purpose of this article to review some of the history of fertilizer production and use, to indicate the role of the Tennessee Valley Authority in focusing attention on forgotten aspects of the fertility problem, and to suggest areas for more detailed study and investigation.

Fertilizer and King Cotton

Fertilizer did not become a significant factor in farming until after the Civil War when many soils which had been depleted and abandoned were brought back into cultivation through applications of guano. Results were often startling. Cotton yields in some cases jumped from 100 pounds to 300 or even 500 pounds per acre. As a result, fertilizer contributed to the hold which King Cotton had over the South. During this period, cotton to the doorstep became the general pattern. But the tribute in fertility which King Cotton demanded was great—much greater than was being replaced by the fertilizers which alone made it possible to continue cotton culture on many of the poorer soils. Unfortunately, the full cost in terms of soil fertility was recognized by few.

Today it is becoming increasingly clear that the depletion of the soil which results from cotton year in and year out on the same fields is not to be measured alone by the fertility which the crop itself extracts (an acre of cotton takes less phosphorus and potash out of the soil than an acre of alfalfa), but must be appraised in terms of the erosion which uncovered fields permit, especially during the wet winter months, and in terms of the leaching and deterioration of soil structure and humus. It was not the crop that was wrong, but the system of farming which emphasized annual cash returns at the expense of sound land use plans and farm management systems.

It would, of course, be unfair to blame fertilizer as such for the downward cycle of Southern agriculture. What happened was that in the history of the South, fertilizers were used by planters and tenants who found themselves trapped in a social and economic situation that left them little choice. Many factors contributed to this downward spiral, ranging from inadequate scientific knowledge to economic pressures resulting from the Civil War and its aftermath. This is not the place to examine in detail the currents and cross currents of Southern agriculture since 1865, but a brief reference to some of the major influences which have contributed to the Southern fertility problem may provide perspective

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for relating current social and economic factors to sound land use plans in many sections of the country.[1]

Henry C. Grady, one of the major prophets of Southern agricultural reconstruction, many years ago predicted that "the South would come into its own when there was June grazing in January." Although he sensed that the South was being penalized by its system of annual row crops, the status of scientific knowledge was not such as to provide the basis for the kind of agricultural readjustment that he hoped for.

Before the turn of the century, the relationship of fertility to the type of vegetation that particular soils could produce was only dimly understood, while most of the early fertilizer research was directed to short-run problems of increasing yields, rather than to the fundamental aspects of soil fertility in relation to systems of agriculture. Soil science as formulated today by Truog, Kellogg, Simonson and others was still in the future. But the knowledge of soils and fertilizers was not the only deficiency. The June grazing in January of which Henry Grady so fondly spoke would not have been possible in his day, even if the soils had been capable of sustaining the vegetation necessary for a livestock economy because other ecological factors would have prevented effective utilization of the feed and forage crops. For example, it was not until the cattle tick and the deadly Texas fever it carried were eradicated that a livestock economy was feasible in most of the South.

Various economic forces also contributed to the continuation of the annual row crop system of the South. Because of the general impoverishment of Southern agriculture, cash was a crying need; and cash could be had from cotton whether it sold for five cents or twenty cents. The same was not often true of the few alternative enterprises which were open to the Southern farmer. As a result, in the areas where a diversified agriculture was possible, cotton (and in some sections tobacco and corn) soon took over, for it was readily marketable and brought in much needed cash. In the absence of refrigeration, the products of diversified agriculture had to be marketed in nearby urban centers of which there were only a few, and where purchasing power was extremely low. The value of cotton as a cash crop was, of course, directly related to the world demand for this product and to the American foreign exchange requirements.

In short, the Southern economy was a colonial economy with most of the social responses and institutional arrangements typical of such an economy. Credit was difficult to obtain for any ventures which were not a part of "the system." Interest rates were high and terms harsh.

Between 1875 and 1890 the Cotton South doubled its production of the staple. During the next decade it tripled it. As a result, Southern farmers were called upon to surrender completely to the domination of cotton (and other cash crops). The supply merchants to whom they were continuously in debt for food, fertilizer, and supplies insisted that they pay back their borrowings and the only way this could be done was by devoting every square foot of land to the row crop which promised some cash return.

Experience soon indicated that many of the soils of the Cotton South were deficient in essential plant nutrients and that fertilizer was a necessity, but neither experience nor research at this time suggested the opportunities for agricultural readjustment which a fertile soil made possible.

[1] This perspective is very necessary to appraise the proposals now frequently advanced that the South should strive to supplant the "Corn Belt" as a corn producer, without sufficient heed being paid to the warnings of the soil scientists.

The Fertilizer Industry

The fertilizer industry may be said to have started with the first manufacture and sale of superphosphate by Sir John Lawes in England in 1843. He prepared superphosphate by reacting sulphuric acid first on bones and then later on mineral phosphates. This process, suggested by Justus Von Liebig, continues to be the primary basis of the phosphate industry today.

The first manufacture of superphosphate in the United States occurred in 1850 at a plant in Baltimore, which city is still the center for the manufacture of "ordinary superphosphate." The first superphosphate from domestic rock phosphate, instead of from bones, was made in 1868, using rock from South Carolina. The importation of nitrate from Chile began in 1861 and of potash from Germany in 1870.

Influenced largely by the theories of fertilization expounded by Liebig, the industry developed as an important adjunct of the Southern cash crop agriculture, and was subject to all the risks and instabilities of the Southern economy. Under these circumstances the development of the industry is not surprising. Like the patent medicine vendor, or the soap and cosmetic companies, the early fertilizer dealer made unwarranted claims for inferior products sold through high-pressure tactics which emphasized the "fertile" stench of the product (achieved by the addition of decaying fish scrap or packing house waste) or the "fertile" color (achieved by the addition of lampblack). Meanwhile the product was often diluted with sand, peanut hulls and other useless filler, for which farmers paid exorbitant prices unrelated to plant nutrient value.

Based on the production of cash crops, it was natural that the fertilizer industry in the United States came to emphasize mixed fertilizers, that is, fertilizers containing nitrogen, phosphate, and potash.[2] The depleted soils of the South responded readily to these so-called "complete" fertilizers since, in terms of increasing the annual yield of a particular crop, all three of the major fertilizer elements usually gave significant responses. The Chilean guanos, which were used quite generally in the early days of the fertilizer business, were in themselves a type of "complete" fertilizer, containing small percentages of the three major fertilizer elements.

Early mixtures were based mostly on superphosphate with additions of imported or by-product materials; almost anything that seemed to have fertilizer value, and some things that did not. In 1880 the average mixture was what would today be called a 2-9-2 grade (13 percent plant food content, 2 percent nitrogen, 9 percent phosphate, and 2 percent potash). At this stage of development little or no filler was used, the several ingredients being mixed together and sold. But it was not long before the industry found, to its own profit, that the selling techniques of the medicine show could be applied to mixed fertilizers, and that farmers unequipped with scientific information were willing to buy sand and other worthless filler if the bag, like a patent medicine, bore a suggestive brand name, smelled strongly, and looked mysterious.[3]

As in the case of patent medicines, abuses led to regulation by state departments of agriculture and today all but one state have laws requiring information on the label as to the contents. Although

[2] This contrasted with European experience where mixed fertilizers have played only a minor role.

[3] Dr. A. L. Mehring and his associates of the U. S. Department of Agriculture have made detailed studies of the filler problem. In 1945, Dr. Mehring reported, farmers paid eight million dollars for worthless filler. U. S .Department of Agriculture mimeographed report, *Proceedings Fertilizer Conference, January 8, 1947.*

originally established to protect the consumer from the industry, the regulatory officials are today suspiciously close to the leading members of the industry. This is indicated, for example, by the fact that the recently organized association of fertilizer control officials had its headquarters in the offices of one of the fertilizer industry trade associations.[4] Thus, with the tacit approval of the regulatory officials, brand names and formulas have multiplied to the confusion and at the expense of the farmer with no particular relation to the requirements of the soil and of sound farming systems.

Although recent research and experience has increasingly indicated that there are two kinds of fertilizer use, the industry has continued to emphasize the role of fertilizers to increase the yield of annual cash crops, boasting in its publicity hand-outs that every dollar spent for fertilizers returns three or even four to the farmer. The industry has sponsored soil-testing activities, but their interest in this field has been merely to determine the kind of fertilizer a particular field requires in terms of immediate crop response. Little interest has been indicated in the broader aspects of sound soil management, including slope, moisture, organic matter content, cropping practices. This approach has, of course, fitted well into the farming pattern of a few areas which possess soils suited to continual cropping, as those of the Mississippi Delta. But on soils not suited to continual cropping, the promotional activities of the industry have frequently prevented farmers from adopting long-range approaches to sound land use.

A careful appraisal of the record of the fertilizer industry seems to substantiate the charge that, despite its protestations to the contrary, it has been unwilling to adjust its production and sales techniques to the interests of the farmer and the needs of the soil as measured in terms of conservation and sound land use. Profit, not public interest, has been the industry's primary objective.[5] In this respect the fertilizer industry is no different than most businesses. The significant distinction, however, lies in the fact that experience and investigation is providing the basis for identifying the public interest in the production and use of fertilizers. For this reason it is no longer desirable to permit the fertilizer industry to continue its single-minded quest of profit, if that quest is not consistent with the national welfare and interest in soil fertility.

The Muscle Shoals Controversy

Aside from the questions of public interest represented by state control laws and the early anti-trust prosecution, the manufacture, sale and distribution of fertilizers long appeared no different than other farm supplies. The beginning of a new point of view was indicated in 1916, however, when Senator Ellison D. (Cotton Ed) Smith introduced a bill authorizing the Secretary of Agriculture to manufacture nitrates for fertilizers in peace and munitions in war at water power sites designated by the President.[6] This bill, which in somewhat modified form became section 124 of the National Defense Act of 1916,[7] not only expressed a concern in the supply of agricultural

[4] The Association of American Fertilizer Control Officials shared office space with the American Plant Food Council in Washington, D. C.

[5] The anti-trust law violations of the industry have been among the most flagrant of any industrial group, a fact which contributed to the attack on the industry by the generally conservative American Farm Bureau Federation. *See*, in this connection, *Hearings* before the Committee on Agriculture and Forestry, U. S. Senate, 80th Congress, 1st Session, on S. 1251, especially page 533ff. These hearings on a bill to establish a national fertilizer program provide a valuable insight into the forces at work in the fertility field. The bill sponsored by the Farm Bureau was an attempt to expand the TVA type of program on a more intensive basis throughout the nation. The bill was also supported by the Farmers' Union, with reservations.

[6] S. 4971, 64th Congress, 1st Session.

[7] 39 Stat. 166, Chapter 134, June 3, 1916.

nitrogen, but also in its approach implied a lack of confidence that the private industry would provide the material on terms which would protect the farmers' interests. At this time there was as yet no recognition of the relation of fertilizer use to soil conservation and agricultural development. This idea was not discussed for another decade.

Under the authorization of the National Defense Act, President Wilson, in 1917, instructed the Ordnance Department to begin work on Nitrate Plants Number One and Two at Muscle Shoals, Alabama, and on the dam which now bears his name, as a source of power for the production of nitrates.

The extended discussion from 1919 to 1933 marks, however, the real beginning of an exploration by the National Legislature of the relationships between fertilizers and the general welfare. It centered, of course, around what to do with the federal facilities at Muscles Shoals.[8] Throughout these debates four major points of view on the Muscle Shoals question can be identified:

1. The point of view of those who conscientiously sought to protect the public interest in the power facilities at the Shoals and who ultimately, when no adequate private offers were forthcoming and in the face of the trust situation in the power field, favored public operation in the interest of power production. In 1921 this group was small and drew most of its support from the "conservationists" who stood firm against private exploitation of water power sites, but were not immediately convinced that public operation was the alternative.[9]

2. The point of view of those who sought to get the hydro facilities at the Shoals for the benefit of private corporations. This group in the postwar period had some continuity with those interests which had sought to develop the Shoals site at the turn of the century. This group made numerous offers for the Shoals, but their plans to produce fertilizers were generally suspect. Of this group the offers most seriously considered by Congress were those of the power companies which were already serving the area and which were to be combined in the Commonwealth and Southern Company which spearheaded the attack on TVA.

3. The point of view of those who primarily wanted cheap fertilizer. This group included those who recognized that fertilizer represented one of the primary expenses of farming operations in many areas, and those who had an agrarian mistrust of the fertilizer industry as another Wall Street controlled trust out to gouge the farmer. This group drew most of its strength from the South but their arguments had an appeal to other sections which fact made possible the coalition between this group and the "conservation-public power" group.

4. The point of view of those who were largely interested in developing the electrochemical industry at Muscle Shoals.

In Congress, the interest in fertilizers was especially evident in the House of Representatives which repeatedly voted against proposals for leasing or selling Muscle Shoals which did not guarantee fertilizer production.[10] It should be noted, however, that very little of the political support for public operation was at this time based on an interest in soil conservation, but almost solely upon a recognition of fertilizer as an important factor in agricultural production. A similar interest in France resulted in

[8] The debates on this subject are summarized in, *TVA and Agriculture: A Study in Regional Administration* by Norman Wengert (unpublished doctoral dissertation on file in the University of Wisconsin Library, to be published by the University of Tennessee in 1949).

[9] It should be noted that Congress in 1928 passed the Norris Bill for public operation in a form similar to the TVA Act only to have it vetoed by President Coolidge. The same bill was passed in 1931 but vetoed by President Hoover.

[10] Speaking of one of these proposals, Congressman James of Michigan stated: "Their offer bears the earmarks of an unconscionable contract for agriculture—the leopard cannot change his spots, and I for one will never agree that the way to help agriculture . . . is to betray it into the hands of the Alabama Power Company for the price of a few million dollars . . . When the people ask us just when we are going to use our property to free the country from its dependence upon Chile for nitrates and when we are really going to have some cheaper fertilizers made at Muscle Shoals for the farmers . . . we can only reply 'Not 'till the Power Trust permits us to do so.'" Senate Report 672, 69th Congress, 1st Session, Part 2, pp. 14-15.

the public operation of nitrate plants in that country.

The agricultural interests in Muscle Shoals was clearly evidenced in the eight Norris bills for public operation, the first of which was introduced in 1922 and the last of which became the TVA Act,[11] which provides as to fertilizers and agriculture in section five, as follows:[12]

"Section 5. The board is hereby authorized—

"(a) To contract with commercial producers for the production of such fertilizers or fertilizer materials as may be needed in the Government's program of development and introduction in excess of that produced by Government plants. Such contracts may provide either for outright purchase of materials by the board or only for the payment of carrying charges on special materials manufactured at the board's request for its program.

"(b) To arrange with farmers and farm organizations for large-scale practical use of the new forms of fertilizers under conditions permitting an accurate measure of the economic return they produce.

"(c) To cooperate with National, State, district, or county experimental stations or demonstration farms, with farmers, landowners, and associations of farmers or landowners, for the use of new forms of fertilizer or fertilizer practices during the initial or experimental period of their introduction, and for promoting the prevention of soil erosion by the use of fertilizers and otherwise.

"(d) The board in order to improve and cheapen the production of fertilizer is authorized to manufacture and sell fixed nitrogen, fertilizer, and fertilizer ingredients at Muscle Shoals by the employment of existing facilities, by modernizing existing plants, or by any other process or processes that in its judgment shall appear wise and profitable for the fixation of atmospheric nitrogen or the cheapening of the production of fertilizer.

"(e) Under the authority of this Act the board may make donations or sales of the product of the plant or plants operated by it to be fairly and equitably distributed through the agency of county demonstration agents, agricultural colleges, or otherwise as the board may direct, for experimentation, education, and introduction of the use of such products in cooperation with practical farmers so as to obtain information as to the value, effect, and best methods of their use."[13]

The TVA Fertilizer Program

By 1933 when the TVA Act was passed there was increasing evidence that some few agricultural leaders, educators, researchers, and even members of Congress sensed the relationship between fertilizers and land use policy—a relationship which justified treating fertilizers on a different basis than farm supplies in general. The language of the TVA Act itself, however, reflects only in very general terms the nature of the national interest in fertilizers. It remained for the TVA Board to interpret the pertinent sections of the statute and to give substance to the national interest in fertilizers in relation to soil fertility. In particular, this was the major task of Dr. Harcourt A. Morgan, long a leader in Southern agriculture.

It is significant to note that, in the process of applying the fertilizer sections of its organic act, TVA eschewed the obvious course of producing fertilizers merely for commercial sale in competition with the fertilizer industry. Although some of TVA's supporters hoped for this and the fertilizer industry dreaded it, TVA has never regarded its fertilizer production activities as the first step in the nationalization of this industry. Instead, the TVA program has developed around three basic elements. The first of these is the research and development of new products and processes for manu-

[11] The eight Norris bills are: S. 3420, 67 Cong., 2nd Session; S. 2372, 68 Cong., 1st Session; S. 2147, 69 Cong., 1st Session; S.J. 163, 69 Cong., 2nd Session; S.J. 46, 70 Cong. 1st Session; S.J. 49, 71 Cong., 1st Session; S.J. 15, 72 Cong., 1st Session; and The TVA Act, Public Act No. 17, 73rd Cong., 1st Session (H.R. 5081. 48 Stat at L 58. 16 USC 631.)

[12] 48 Stat. at L. 58 (16 USC 631).

[13] The TVA Act also contains a number of other references to agriculture in general and fertilizer in particular, but the above are the major provisions.

facturing fertilizers. The second is the so-called "test-demonstration activity" designed to determine the value, effect, best methods of use and economic return from fertilizers. And the third is the incidental distribution of TVA-produced fertilizer materials.

Product and Process Research. The outstanding feature of TVA's work on products and processes is that the direction and emphasis of this work is determined in relation to soil needs and conservation objectives. In addition it is noteworthy that TVA's research is carried from laboratory to full plant-scale development. As a result, TVA is engaged both in fundamental and in applied research. Its experimental production plants are full-scale, commercial-size operations, producing substantial quantities of fertilizer materials. At the same time, these large-scale plants are operated on a strictly experimental basis.[14] Changes are made in plant equipment and facilities in order to achieve the greatest amount of experimental operating data. While careful cost records are kept, and plant efficiency is very high, policies determining plant operations are not based on a desire for increased profit, but rather on the desire to accumulate additional research information.

Although the Defense Act of 1916 envisaged the production of nitrate fertilizers, the TVA Act gave the Board considerable discretion in formulating its fertilizer research and production program, and some rather fundamental reasons suggested the unsoundness of embarking on a nitrate program in 1933. These reasons have been summarized by TVA as follows:[15]

(a) Nitrate Plant No. 1 was totally and hopelessly obsolete.

(b) It would have cost a great deal of money to put Nitrate Plant No. 2 into operation as a fertilizer plant, with no assurance that a market could be found for the product. In fact, the total consumption of cyanamide fertilizer in the United States was about 60,000 tons in 1933, or less than one-third the capacity of Nitrate Plant No. 2.

(c) Operation of Nitrate Plant No. 2 would not have cheapened and improved fertilizer production or aided in control of soil erosion and it was therefore not evident that mere operation of the plant would have been in keeping with the letter or spirit of the Act.

(d) A supply of nitrogen in the soil, adequate in many cases, may be maintained through proper use of legumes in crop rotation.

(e) The only way in which a cheap synthetic nitrogen supply could be obtained at Nitrate Plant No. 2 would have been to build a new ammonia plant and it was concluded that many other phases of the program deserved prior attention.

The development of a program that would have emphasized potash was also dismissed in 1933. Although of increasing importance, potash deficiencies did not seem to present the problems nor the opportunities of phosphate development. In addition, from a technological standpoint, potash processing techniques were comparatively simple and prospects for improvement seemed limited. Finally, potash ores had only recently been discovered in the United States, and this development was many hundred miles from the Tennessee Valley. It should be noted, however, that although neither nitrates nor potash were emphasized in the TVA research program, they were not entirely neglected.

In the field of phosphates, the third of the major plant nutrients, (TVA decided) lay the area for emphasis. The factors

[14] An exception to this statement is the nitrate plant which was rebuilt in 1940 at War Department request for munitions production, and has since 1943 been producing ammonium nitrate fertilizer. TVA has thus far tended to regard this activity as an emergency development merely to supply this material during the accute shortages.

[15] TVA, *General Outline of Chemical Engineering Activities, Chemical Engineering Report No. 1*, by Harry A. Curtis, Wilson Dam, Alabama, 1942, p. 3.

influencing this decision have been summarized by TVA as follows:

(a) The production of concentrated phosphates offered the best chance of arriving at "new types" of fertilizers, of improving and cheapening fertilizers, of establishing new fertilizer practices, and of contributing to the prevention of soil erosion, in accordance with Section 5 of the TVA Act.

(b) Natural rock phosphate was available in Tennessee. The electric furnace method offered the possibility of utilizing lower grade ores than had been used to date.

(c) The equipment and facilities available at Nitrate Plant No. 2 could be utilized to a considerable extent, in keeping with Section 11 of the Act.

(d) The production of elemental phophorus at Nitrate Plant No. 2 would restore a national defense value to the plant.[16]

The results of the research program which for over fifteen years has been centered at Wilson Dam, Alabama, have been many, and TVA is today recognized as a major research center in the field of phosphorus and its compounds.[17] Developments carried to plant-scale operation have included the art of making triple superphosphate (46% plant nutrient content) with phosphoric acid produced by the electric furnace; the methods for manufacturing calcium metaphosphate (61% plant nutrient content) and fused tricalcium phosphate (27% plant nutrient content). In addition, laboratory investigations are at various stages of development and many improvements have been made in the several stages of the production and mining operations. Considerable attention has also been devoted to the use and disposal of by-products.

The Test-Demonstration Farm. The second element of the TVA fertility program is the test-demonstration farm. In accordance with the statutory language authorizing investigations into the value, effect, best methods of use and economic returns from fertilizers, TVA has pioneered in a research and educational program based on the use of its phosphates in a whole-farm system. Although TVA has also provided its experimental fertilizers for research and investigation by the forty-eight state experiment stations, it has placed greater emphasis on test-demonstration farm experience. In an official statement on the test-demonstration activities, TVA said:

"The test-demonstrations are conducted for the purpose of determining the value, effect, and best methods of use of new types of fertilizers on practical farms in relation to adjusted cropping systems, livestock production practices, new methods of soil preparation, planting, harvesting and storage of crops and other interrelated farm and home practices. They provide an important educational device in demonstrating to other farmers the opportunities in making sound adjustments on their own farms. A major objective of the test-demonstrations is adoption by all farmers in a community of better farming systems which will improve soil fertility through a continuous process of experimentation, education, and introduction on practical farms of more efficient farming methods and techniques. In the Tennessee Valley, the test-demonstration farms are integral parts of the over-all program of resource development, agricultural adjustment, and watershed protection.[18]

"Test-demonstration farms are of two kinds: individual farm units and farms which are a part of test-demonstration areas. The individual *unit* farm is selected by neighboring farmers, subject to approval by the college and TVA, and is generally representative of the community with respect to soils, size, and type of farming. A test-demonstration *area*

[16] *Ibid.*, p. 4.

[17] *See*, J. H. Walthal, "Developments of the Department of Chemical Engineering of the TVA Relating to Phosphorus and Phosphates," 32 *Proceedings Louisiana Engineering Society* 74 (April 1946).

[18] It is apparent that the fertilizer responsibilities of TVA are not primarily regional in scope. This fact has posed a significant dilemma which has frequently been embarrassing to TVA. In general, TVA's policy has been to intensify its fertilizer activities in the region. Thus TVA regards the Tennessee Valley as a pilot region and uses its phosphate as the starting point of a regional program of watershed protection and agricultural development.

includes all the farms within a rural community identified with a local school or church. Like the unit farms these farms in an area demonstration are established by the people of the community with the advice of the county agent subject to approval by the colleges and TVA. The test-demonstration area provides a community wide approach to problems of farm readjustment and an important device for assisting communities which have been affected by TVA reservoir construction. The test-demonstration areas also provide an opportunity to deal with problems of the relationships between soil fertility, agricultural readjustment, and water control on the land."[19]

From the beginning of this program of test-demonstration to January 1, 1948, TVA has supplied some 63,321 farms in 30 states with 390,000 tons of phosphate fertilizer produced at Muscle Shoals. The test-demonstration farmers have paid the freight and handling charges on these materials, but the cost of producing them has, until the current year, been paid entirely from appropriated funds. In addition, within the Tennessee Valley proper, TVA has supplied funds to the several state extension services in order to provide assistant county agents in the Valley counties to assist farmers in planning their farms, making best use of the phosphate materials, and in making the most effective use of the test-demonstration farm as a community school room and laboratory.

At the suggestion of the House Appropriations Committee, TVA is this fiscal year putting a plan into effect under which test-demonstration farmers will pay for fertilizer materials according to a predetermined graduated schedule. Accordingly, TVA will provide the material without cost during an initial period. During an intermediate period, the farmer will be expected to contribute fifty percent of the test-demonstration price and, in the final stage, the farmer will pay the full test-demonstration price. So long as farm prices remain high, there is reason to believe that the test-demonstration work will not suffer from this arrangement,[20] but the long run effect may be profound.[21]

Fertilizer Distribution. TVA has repeatedly stated that it was not interested in commercial fertilizer production, and its record bears out these statements. When the first plant-scale facilities were completed in 1935, the materials produced were used exclusively on test-demonstration farms. By 1937, however, the TVA electric furnaces were producing more material than could be absorbed in test-demonstrations. TVA then took the initiative and persuaded AAA (then headed by Dr. Howard Tolley) to distribute TVA concentrated superphosphate as a grant-of-aid, especially in the Valley states. With the war, TVA production was devoted largely to munitions[22] (elemental phosphorus, ammonium nitrate, carbide, dicalcium phosphate), although small quantities of phosphate fertilizer were still manufactured for test-demonstration use and small quantities were also exported to Britain under Lend-Lease. Military requirements for elemental phosphorus increased considerably during the war, so that TVA's capacity was expanded at the request of the War Production Board. With the end of the war, therefore, TVA found itself with capacity to produce even more fertilizer than it had before the war.

As a part of the war effort, TVA also rehabilitated the ammonium nitrate plant and produced this material for

[19] *Hearings* before the Subcommittee of the Committee on Appropriations, House of Representatives, 80th Congress, Second Session, on the "Government Corporations Appropriation Bill for 1949," p. 544.

[20] *Ibid.* Appropriated funds available for test-demonstration purposes in fiscal year 1949 have been cut more than half the amount which had been available in 1947.

[21] For a discussion of why TVA supplies these materials at a low cost to the farmer see the TVA report issued in 1947 under the title of *Food at the Grass Roots.*

[22] See the *TVA Annual Report*, 1945, pages 2 and 3.

munitions purposes until June 1943 when military requirements ceased, at which time TVA converted its plant to the production of ammonium nitrate fertilizer.

In the face of the acute fertilizer shortages it would have been unthinkable for TVA to have shut down its wartime capacity and to have restricted its production to test-demonstration needs. At the same time, TVA was unwilling to distribute its products merely on a commercial basis. It has chosen, instead, to sell both ammonium nitrate and concentrated superphosphate through farmer cooperatives operating in over thirty states. These distributors have agreed to sell the TVA materials in such a way that they will be used consistent with test-demonstration experience. TVA prices approximate current market prices.

Fertilizers and the Land. A fundamental principle of the TVA fertility program is that the maintenance and restoration of soil fertility is essential to the national welfare. In a much heralded policy statement on this subject,[23] TVA emphasized that its objectives have not been merely to produce better fertilizers or to develop a better understanding of their use on the part of farmers, but rather to provide fertilizers in the context of the national soil fertility problem and to give farmers the opportunity to understand the role of fertilizers in the restoration and improvement of the nation's soils.

In this respect, therefore, TVA's program represented a departure from the traditional thinking about fertilizer production and fertilizer use. A fundamental consideration in the orientation of the TVA program has been the problem of soil needs. TVA has, however, rejected Liebig's popular "bank account" theories, according to which the soil acts as a sort of sponge, containing the various minerals necessary for plant growth or into which the missing elements can be placed. It has also avoided many of the other superficial, though appealing, "doctrines" about soils and fertility.[24] Instead, TVA has based its program on the best of modern soil science which emphasizes that soil is a three-dimensional bit of landscape in which numerous geological and biological and chemical processes are at work. According to this view, therefore, to determine soil requirements such factors as climate, vegetation, rainfall, contour, slope, land-use and the influences of people and society must be considered, as well as chemical and geological factors.

Accordingly, the TVA program recognizes that most soils are deficient in essential plant nutrient elements, especially in phosphate, and that most soils require the addition of this and other minerals. With the exception of the Kentucky and Tennessee blue grass regions and of limited areas in other parts of the country, the soils of the eastern humid sections of the United States are recognized in their virgin state to have been of generally low fertility and especially deficient in phosphorus.[25]

The TVA program also emphasizes the fact that the fertility level of the soil exerts a determining influence on the type of agriculture that can be maintained upon it. Hence it is clear that a fertile soil is an essential prerequisite for agricultural improvement and readjustment in land use, both inside and outside of the Tennessee Valley.

From this point of view, the most profound effect of mineral plant nutrients is

[23] "Mineral Fertilizers and the Nation's Security," an interim report of the TVA Board, quoted in *Hearings* before the Subcommittee of the Committee on Appropriations, House of Representatives, Independent Offices Appropriation Bill for 1946, 79th Cong. 1st Session, pp. 404-407.

[24] Charles E. Kellogg, "Conflicting Doctrines about Soils," *The Scientific Monthly*, June 1948, p. 475.

[25] See Charles E. Kellogg, *The Soils That Support Us*, (New York: 1941), pp. 234-235. Also U. S. Department of Agriculture, *Soils and Men* (1938) pp. 21ff. and 377ff.

in supplementing and replenishing the the natural minerals of the soil, so that it is adaptable to a wider range of crop plants than was otherwise feasible. On many natural soils, for example, nutritious types of grasses and legumes do not grow well. But, by increasing the soil minerals, especially phosphate, and adding lime as required, alfalfa, clover and blue grass may be substituted for scrub pine, broom sedge and poverty grass. The nutritional and economic significance of this substitution is tremendous.[26]

Finally, the TVA fertility program stresses the fact that indiscriminate use of fertilizer (as often urged by the fertilizer industry) will not necessarily solve the basic problems of fertility. The factors of fertility are many and complex in their interrelationships. As a result, the building and maintenance of the soil depends in many areas upon the use of fertilizers in a sound land use system, which takes into account the moisture, organic matter, soil capabilities, slope, farm enterprises. And to determine what these relationships are is one function of the test-demonstration farm. In short, you can buy fertilizer in a bag, but not fertility.

The Need for Further Research

It is unquestionable that the industry's failure to recognize some of the facts and factors that have been referred to is not alone due to its desire to continue in the familiar patterns of the past, nor to the selfish motivations reflected in its frequent violations of the anti-trust laws. Of equal significance has been the absence of what Dr. Charles M. Hardin has designated "programmatic research," especially in the land-grant colleges, in order to establish the basis for sound public policy.[27]

On its part, through the judicious and deliberate administration of research funds, the industry has obtained a research emphasis which builds on the past rather than looks to the future. It has been characterized by a preoccupation with increasing yields, with brand names and with mixed fertilizer formulas. This work has gone forward on the assumption that mixed fertilizers are the answer to the soil problem.

The field of investigation has been left by default largely to the agronomists, while the few economic studies have proceeded under the assumptions of the industry and have emphasized fertilizer as just another factor of production.

Thus, the industry is, in a sense, caught in a web of tradition of its own making. It has set the direction not only for itself but for many of the research institutions to which the farmer and the industry must look for guidance. At the same time the industry has violently opposed the program of the Tennessee Valley Authority, being unwilling to examine TVA's position or to propose alternatives.[28]

It is in this general area, then, that a new research approach is needed, and this article will indeed have served its purpose if it will have stimulated some interest in this field of study.

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[26] The work of Dr. William Albrecht is important in this respect. See his article, "Soil Conservation for Health's Sake," in *River Valley Development in Southern Ontario*, Province of Ontario, Department of Planning and Development, Toronto, 1945, p. 50 ff.

[27] Charles M. Hardin, "Programmatic Research and Agricultural Policy," *Journal of Farm Economics* (May 1947) p. 359. A critical review of method such as that of Leonard Salter in his *Land Economics* (University of Minnesota Press: 1948), is sorely needed in this field.

[28] Within the last year the National Fertilizer Association has had several meetings with representatives of TVA, including a two day meeting at Muscle Shoals. It is, however, still too early to assess the results of this apparently sincere attempt at understanding the TVA fertility program.

Impressions of Property Taxation in Australia and New Zealand†

By HAROLD M. GROVES*

THREE significant generalizations about property taxation in the South Pacific countries strike the American observer at once, and they will serve as a safe beginning for this article. The first is that, although these countries generally overlook nothing in their tax systems and tax what they tax at least as heavily as we do, general property is an exception. They ignore personal property entirely and in many jurisdictions extend this immunity to improvements. This leaves a very narrow base for property taxation and, while they frequently (though not universally) tax land more heavily than we do, the total load (relatively speaking) borne by general property is certainly very much less. The second observation is that while in general the South Pacific countries are notoriously indifferent to incentives in ordering their tax systems they are far more sensitive than we are in the local and property tax areas. The third generalization is that while the seeds of doctrine scattered by our own "prophet," Henry George, fell on uncongenial soil at home, they have fared much better in Australia and New Zealand.

Summarizing the facts with regard to the tax base, one observes that in three of the six Australian states (Queensland, New South Wales, and West Australia) all property taxation is based almost exclusively[1] on unimproved land values. In the other three states municipal voters have an option as to the broader or narrower base. An undated summary for the country as a whole concluded that there were 622 municipalities using unimproved land value rating and only 370 using annual (including improvements) value rating. "Many years ago all used annual value but the great majority have abandoned it." Over 90 percent of the area of Australia under municipal government uses the site value basis.[2]

In New Zealand voters have the triple option of rating on unimproved value, "improved capital value" (as in the United States), and annual value (as in Great Britain). The proportionate number of local authorities rating on unimproved value at the beginning of the 1945-46 fiscal year was 54.37 percent and the proportion of the people in the Dominion in districts so rating[3] was 60.8 percent. Of the principal cities, Auckland and Dunedin rate on annual value and Wellington and Christchurch on unimproved value.

Charges on land values in both countries are not confined to local levies. They also take the form of Crown leases of public land and national and (in Australia) state land taxes. These central collections, however, usually reach certain properties only. This is true in the case of the land taxes because of a specific exemption. However, no such exemptions are provided in Tasmania, South Australia and West Australia.

A prewar estimate places the Austra-

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† Based mainly on impressions and documentary evidence gained in a recent trip through these countries.

[1] In the case of some special charges, improved values may be included.

[2] *Rating upon Net Annual Values or Rating upon Unimproved Land Values?* General Counsel for Rating Reform, Melbourne, p. 2. The summary is recent enough to be indicative of present facts. It says nothing about the population under the two systems, which would be a more significant datum than area but one not available. The author's impression is that the trend toward taxation of unimproved land values in the populous state of Victoria, while steady, has been slow.

[3] *New Zealand Official Yearbook, 1946*, Wellington, 1948, p. 471.

lian annual collections from unimproved land values at approximately £15 million.[4] In terms of American money and population this would mean an equivalent of from $1,250,000,000 to $1,500,000,000. This looks within the range of the land portion of our own general property tax (the whole calculated at $4 billion and assuming a third of the base was land.) However, the Australian figure does not include the contribution of land to the local tax on improved value. Local rates alone in the municipalities of New South Wales usually run 4 or 5 pence in the pound (in the neighborhood of 2 percent). In the case of the national tax the graduated rate on estates (of residents) worth £75,000 adds up to 5 pence in the pound and is confined to the excess over the exemption of £5,000. The higher state taxes are also in this range. However, combined taxes on land in Australia are said to run not infrequently to 7 or 8 percent of unimproved value. Unimproved values in in the city of Sydney constitute slightly under 30 percent of total capital value.[5]

An explanation of these relatively modest rates on such a narrow base is not at all difficult to find. Local government in Australia and New Zealand is a very limited affair compared with its counterpart in the United States. Particularly important and conspicious is the fact that public education in these countries is supported entirely by central governments and is thus very largely divorced from the property tax. Whether or not this is good for the schools is an interesting question but one that need not here detain us. Suffice it to say that were the American property taxpayer "shed of" his school tax he would regard himself on easy street (with perhaps as much as a third of his load lifted). Nor is this the whole story. In many Australian cities (Sydney, for instance) fire and police protection and street transportation are largely state functions. The assessment of property itself is very largely centralized. This leaves the municipality a comparatively light load. Incidentally, it explains in part perhaps why the division of a Metropolitan area like Sydney into a relatively minute central core and some 48 suburbs (all largely independent)[6] is tolerated and tolerable.

It should be noted also that the land tax program of Australia and New Zealand is not only not a "*single* tax" program; it involves features which are not Georgian and that are opposed by many Georgians. Significant here is the fact that the national and state land taxes are characterized predominantly[7] by graduation, a minimum exemption and other features giving these levies the earmarks of "personal taxes." They aim not so much at government collection of economic rent as at dismemberment of great estates and the development of widespread ownership of land. As revenue procurers they are of minor importance. They go back in Australian history to the days when land-hungry settlers and erstwhile miners sought to wrest good holdings from those who had "come in on the ground floor." Or they can be regarded as part of a more or less world-wide movement to correlate the ownership and operation of land. This objective is not necessarily incompatible with the Georgian idea of socializing the economic rent of the land, but it is not a part of the Georgian program and is regarded with hostility by many "simon-pure" Georgians. These taxes are criticized by others also on the ground that

[4] E. G. Craigie, *The Taxing and Rating of Land Values in Australia*, 1939, p. 28.

[5] *The Official Year Book of New South Wales, 1941-42, 1942-1943* (Sydney), p. 484.

[6] County Councils may and have been formed for the provision of certain services.

[7] Of the Australian state taxes only those of Tasmania and Queensland are graduated.

they are a clumsy instrument, ill-calculated to promote optimum holdings in the several widely different forms of land use such as pastoral, mercantile and manufacturing. Like other progressive taxes, they encounter the subterfuges by which a single personality presents himself to the revenue as two or more: that is, creation of corporations and trusts for holding real estate and division of ownership among members of the family.[8]

The principal advantage claimed for confining the property tax system to land is that this is said to be conducive to building. Land values, it is said, are the product of a natural gift and community development. Sites are inelastic in supply; and income attributable to them needs no coaxing and cannot be discouraged. On the other hand, buildings are produced by individuals and building can be and is discouraged by high taxes. In short, it is at the personal rather than the community level that incentives are effective. This is the familiar Georgian doctrine that it is folly to "fine" an individual because he has "painted his garage."

Much interest centers on the question of which properties in a community would immediately benefit and which would lose by making use of an available option to shift from the taxation of real estate generally to that of site values exclusively. Georgian organizations in Australia sometimes make exhaustive studies of this pending a referendum on the matter. It is obvious, of course, that property owners whose ratios of improvements to land are above average stand to gain and those whose ratios are below average to lose. More specifically, the owners of most manufacturing properties and of well-improved residential and mercantile properties will gain. In the case of mercantile property the outcome is rather uncertain; land values may be relatively high in the case of centrally-located mercantile property even though such property is reasonably well improved. "Decadent residential" property and vacant land will, of course, suffer as will quarries. In case urban and rural property both contribute to the same treasury (which does not happen often on an important scale in the case of Australian local rates) the latter will ordinarily lose by the change to the more restricted tax base; this is due to the fact that the ratio of improvements to land is higher in the city than on the farm.[9]

Although there have been elaborate attempts to demonstrate differential rates of development attributable to taxation policies with regard to land and improvements there are so many variables in the matter of community growth that any analysis of this sort has to be judged as somewhat inconclusive. Nevertheless, it may be recorded that the Georgian organizations of Australia have published extensive data purporting to show that the land tax states and areas have a marked advantage in agricultural development, building construction, increase in net income and factory expansion. The data in the main consistently support the authors' thesis.[10]

Fundamental to Georgian doctrine of course is the proposition that the incidence of land taxes is on the landowner and that land taxes tend to reduce land values whereas other taxes are shifted

[8] An interesting and unique feature of the administration of these centrally-imposed land taxes in these Dominions is that which authorizes public purchase in case the landowner submits a figure deemed subtantially below actual value. For discussion, see James H. Gilbert, *The Tax Systems of Australasia* (University of Oregon, 1943), p. 57. The rule works both ways in New Zealand (*ibid.*, pp. 126, 139).

[9] These conclusions are based largely on *Report on Social Effects of Municipal Rating*, a study conducted in Footscray (Melbourne suburb) by the Land Values Research Group with the cooperation of the Footscray City Council and on the studies of H. Bronson Cowan for the International Research Committee on Real Estate Taxation (mimeographed and made available to the current author by Mr. Cowan).

[10] *Public Charges Upon Land Values* (Melbourne, Henry George Foundation.)

forward as costs of production. Empirical data can be found to support this deductive contention.[11] The point is used as an argument against, as well as for, the exemption of improvements. On the one side it is argued that reduced values make land more available to poor people and reduce the burden of rising taxes as land passes from generation to generation. On the other hand it is argued that lower values mean a lower tax base and this means higher tax rates and still lower values in an unending spiral. It must be granted that there are two factors at work that may have counteracting effects on land values. The tax itself very probably tends to reduce them but the stimulus to building (if it is effective) may offset this tendency from the demand side. More building, better services, a developing community (attributed to the shift from annual to unimproved value rating) tend to support land values. Evidence from specific studies of transitions from the broader to the narrower base of taxation indicates that, within moderate levels of charges, land values have frequently shown no decline following the change. In fact, the contrary has sometimes occurred.[12] Moreover, decrements in land might be offset to some extent by increments in buildings. (The latter of course would not figure in the tax base but would be important to the property owner.) These increments, however, would be temporary; in the long run, buildings as such tend to be worth their cost of reproduction; a buyer would be foolish to pay more for an existing structure than the cost of the presumably available ingredients to build another like it. The fact that land values need not respond negatively to the exemption of improvements accounts for the fact that "real estate men" may not be well-advised to oppose such policy and in fact are not always opposed to it.

Arguments heard in the South Pacific against the local taxation of land values (exclusively) are familiar ones: first, that it leads to overcrowding in cities; second, that it ignores the benefits of local government that are enjoyed by the owners of improvements; and third, that it leaves too narrow a tax base to support local services.

The first (overcrowding) is countered with the proposition that land values are capitalized and take their toll from present and past owners, leaving future buyers with no more incentive to overimprove land than they would have without the tax. A person who purchases a large homesite (placing a high value on light and air and space) will pay less for it taking account of the tax (and anticipated tax) that runs with the land. Thus his imputed interest will be less and his total cost no higher than as though the tax were nil. In other words, he pays for the same value either way; in one case he buys subject to an obligation to pay part or all of the income attributable to the land in taxes; in the other case he pays more interest to someone else or ties up his own funds and imputes it to himself. Under Georgian taxation, as compared with general taxation, the new owner of an idle lot would have more carrying charges but he would have less money tied up in his investment. Of course the Georgians cannot have it both ways; in so far as this argument is sound, it counteracts the contention that land taxation is stimulating to development at all. The truth probably is that the

[11] Thus for instance it has been calculated that from 1901 to 1937 the percentage increase in land values in Victoria (taxing improvements) was conspiciously greater than in Queensland (taxing land only). The former showed an increase of 77.5 percent and the latter a decrease of 16.7 percent. On the other hand, Tasmania experienced a lesser increase than New South Wales, a fact that is accounted for by the authors as due to the former's loss of population. The figures at least illustrate the difficulty in drawing conclusions from data that are the result of several variables. (*Ibid.*)

[12] H. Bronson Cowan, "The Effect of Site-Value Rating on Land Values," (Interim Report No. 19: mimeographed).

present owner will consider the fact that he can reduce his taxes in relation to his wealth if he invests newly acquired financial resources in improvements rather than in land. This creates an incentive for improvement and over-improvement. However, over-improvement (social rather than economic) can be counteracted in other ways such as through building restrictions. Of course, the development of transportation will make overcrowding less profitable.

Turning to the second argument, the Georgians hasten to repudiate benefit taxation theory. Here, of course, they have much authority on their side, citing the absence of any clear calculus by which benefits can be allotted to taxpayers. The Georgians also make short shrift of ability-to-pay considerations. They regard the ability doctrine as perverse and hold that recent trends giving it more and more scope are headed for (if they haven't already occasioned) pernicious results. The Georgians give all honor to Adam Smith's economy canon, that taxes should be so levied as not to discourage economic development.

The final argument—that land values leave too narrow a base for local taxation—has less validity in Australia than in some other countries, Western Canada, for instance. As previously explained, the area of local responsibility has been nicely limited in Australia and New Zealand, giving the Georgians the best possible situation in which to demonstrate successfully.

It is in Australia that the greatest effort has been made to isolate and tax "pure economic rent." It will be recalled that many economists have long insisted that the separation of land and improvements could never be done with precision. The New South Wales Yearbook defines "improved capital value" as "the amount by which the fee simple estate of the land, with all improvements and buildings thereon, could be sold." Unimproved capital value is simply the above, "assuming that the actual improvement had not been made."[13] This may sound simple but it is a very troublesome concept to understand and administer.

The improvements that administrators seek to eliminate are not of course the general improvements of the community. The question is not one of what raw land would be worth to new settlers but what such a good would bring in the midst of a civilized and (probably) well-settled community.

It is recognized that improvements may be intangible as well as tangible. Improvements and buildings are not identical terms. Grading, clearing, fencing, fertilizing and removing pests are intangible improvements. A tennis court is an improvement, not one of "the original and indestructible powers of the soil."

Trouble arises in the case of ancient intangible improvements that may or may not have lost their relevance to modern conditions. Thus, if two lots are exactly alike except that many years ago Lot A was marked by a gully which required filling (and was filled), should the two be valued and taxed differently to the end of time? Let us say that both lots are now worth $5000 and that the cost of leveling the one many years ago was $500. Should the assessor continue to recognize a difference of $500? On Georgian logic the answer is a simple affirmative yet an Australian Commission expressed grave doubts.[14] Even more troublesome is the matter of long-standing investment for clearing or for the removal of ob-

[13] *The Official Yearbook of New South Wales, 1942-41 and 1942-43* (Sidney) p. 482.

[14] *Fourth and Final Report of the Royal Commission on Taxation* (Canberra, 1934), pp. 216-218.

noxious weeds or some other condition inimical to production. What should the rule be in case weeds are removed and then are allowed to return and require clearing a second time? In this latter case it seems quite clear that the outlay ought not to be "chalked up against the original and indestructible powers of the soil." It has been suggested that a time limit for the carrying of these intangible offsets might be imposed. No clear rule seems to have been established except the rather indefinite one that the intangible improvement must have current relevancy to the productivity of the land. Thus, expenditure for fertility could not be used as an offset in the case of urban land.

There has been some dispute as to whether an evaluator should proceed to find land values by "subtraction" or "abstraction." The difference between the two and the difficulty with the former, in some cases, can be illustrated very simply by citing the instance of overbuilt property. Ordinarily, total value minus improvement value equals land value. But, in the case of overbuilt property, subtraction will not give the right answer. It is necessary to "abstract" the land from the situation, compare it with other land with similar attributes, and determine for it an independent valuation. Total value minus land value will then give the correct figure for the value of improvements. Both "abstraction" and "subtraction" have been recognized in Australia as leading to a valid result in the proper circumstances.

The question may also arise as to whether land takes on value because it is the situs of a profitable business. Usually the value associated wth a business as such is independent of the premises on which and in which it is conducted. Thus two lots in equally good locations would not have different values because one was associated with a profitable and the other with a losing business. The difference might be due to management or it might be a matter of more and less favorable business circumstances that are reflected in a value of businesses as such. We are familiar for instance with the intangible business value known as good will. But in the American practice of assessing utilities it has been assumed usually that the value of the business carries over into the value of the premises. And there have been cases in Australia where profit from a business was held to "run with the land." Thus in a case where land was used as a race course[15] it was held to acquire value from this particular and very profitable use. The property was licensed by the Queensland Turf Club and the license had passed through two exchanges. On the other hand, in later cases involving licenses, particularly hotel and liquor licenses, the privilege was said to run with the improvements and the allegation of particular value for the land arising from the nature of the business conducted on the premises was rejected. Moreover, in one such case, appealed to and adjudicated by the Privy Council of the British House of Lords,[16] the Court refused to apply the subtraction method. Improvements were to be taken as not only nonexistent but as though they had never existed. The land should be divested, nationally, of all improvements and the work of valuation should proceed from that basis.

The difference between abstraction and subtraction in the case of property used in a profitable business is fundamentally the question of whether some of the value of the business attaches to the land. Where a particular lot has been

[15] *Commissioner of Land Tax* v. *Nathan*, 16 C L R654 (1913).

[16] *Toohey's Limited* v. *Valuer General* (1925) A C 439; see also *Wilson's Case* 1927 V L R (Victorian Law Reports 399).

committed to long use as an hotel and adjoining lots might have been but will not be selected for an equally profitable use, subtraction of the investment in improvements from total exhange value will give the hotel lot more value than that of adjoining lots. Abstraction or substitution will give it the same value as the surrounding sites. It is settled, of course, that land should be assessed at its value in its most profitable use but this rule may not prove very helpful. Perhaps it was the pardonable confusion of one court which prompted it to state that value "is to be ascertained by a consideration of all the circumstances and not upon fixed methods and rules."[17] Fortunately, such troublesome cases are the exception and not the rule.

It is interesting to observe that the "single tax" movement in Australia is not mainly a class movement and attracts many who espouse no other form of radicalism (if this tax doctrine may be so designated). Many of the Georgians are well established and quite successful in "the free enterprise system." Many of them prefer the Liberal (conservative) to the Labor (socialist) party. They disapprove of the latter's penchant for protection and government ownership. Challenged on the score that no *single* tax could possibly support a modern national governmental budget plus those of all its constituent states, they counter with the reply that these governments may be substantially "overgrown." The rent of the land, they say, would be adequate to finance all the government that is needed and legitimate. Of course not all of those who favor the exemption of improvements carry their "Georgianism" that far.

The author was presented with the following bit of doggerel which throws some light on the nature of "simon pure" Georgian philosophy as it survives on a considerable scale in Australia:

The bane and curse of man and nation
Is the robber who robs in the name of taxation
The power to tax is the power to destroy
The wealth we produce that all should enjoy
It's abundantly clear to eyes and minds
That the earth is the birthright of all mankind
Let the bells ring out from every steeple
The rent of the land belongs to the people!

The application of rates in Australia and New Zealand outside of the prevailing practice of exempting improvements is not unique. In general, the taxation of annual value follows quite closely the British model. However, idle lots are not exempt from levy. In Victoria, rates are levied on the occupier or, if there is no occupier, upon the owner. However, it is provided that where the occupier pays the rates and where there is no agreement between the parties, the occupier may recover the tax from the person to whom he pays the rent. The rule prevails generally, with some safeguards, that local governing bodies may levy special rates on parts of districts deemed to be specially benefited by certain public outlays. In South Australia property used for the purpose of any school or academic institution charging fees is assessed at one-fourth its value and that for agricultural or horticultural exhibitions at one-half its value.

The author of this article disclaims any intent to promote or discourage the idea that land is especially suited for taxation. His purpose rather is to describe and explain certain taxation practices and ideas that have a unique development in these English-speaking countries. Whether these developments have any relevancy for the United States might be interesting to explore, but the author will forego the temptation and leave the reader to form his own opinion.

[17] *Scott McLeod* v. *Commissioner for Land Tax*, 35 A L R 195 (1929).

The Place of the Government Corporation in the Public Utility Industries†

By WILLIAM M. DUFFUS*

I. Introduction

THE purpose of this paper is (1) to raise questions, suggest possible answers, and offer for consideration certain conclusions set forth by investigators of the subject of government corporations in general and (2) to apply these questions, answers, and conclusions to the public utility industries. The writer makes no claim to originality and regards himself only as a reporter and analyst of ideas on the subject.

The term *public utility* is broadly interpreted in this paper to include transportation enterprises as well as public utilities in the narrower sense of electric power, gas, water, and communications industries.

The term *government corporations* as used herein cannot be defined easily, if one aspires to complete accuracy of inclusiveness and exclusiveness. The government corporation, as it is defined for the purposes of this paper, is an incorporated governmental agency, owned and controlled, in whole or in part, by one or more governments for the primary purpose of supplying economic goods or services to the public at a price or without a price.

In the United States, government corporations, as we are thinking of them, have been called "government-owned corporations" or "government proprietary corporations" by political scientists and "government business corporations" by university specialists in business administration. The shorter, more convenient term "government corporations" seems now to be generally acceptable in academic, governmental, and business circles. In Britain government corporations are officially known as "public corporations."

It is not a question of whether a utility is self-supporting on a separate accounting system or whether it is financed through the general funds of the government. The determining characteristic of a government corporation is the separate corporate entity. Unless the publicly-owned utility is incorporated, reference to it as a "government" or a "public" corporation is misleading.

The government which owns and controls the government corporation, or participates with other governments in its ownership and control, may be a nation, a state or province, or a subdivision of a state or province. Pertinent examples of national ownership and control are: the Tennessee Valley Authority, the United States-owned-and-operated Panama Railroad Company, the Canadian National Railways, the Canadian Broadcasting Corporation, the British Broadcasting Corporation, the British Central Electricity Board, the British Overseas Airways Corporation, and the Electricity Supply Commission of the Union of South Africa.

Examples of long-established ownership and control by a single state or province of a nation are found in the Hydro-Electric Power Commission of Ontario, the Railways Commissioners for New South Wales, and the Victorian Railways Commissioners in Australia. Examples of ownership and control by a subdivision of the state, under enabling

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acts of the state legislature, include the recently created metropolitan transit authorities of Chicago and Boston and vicinity.

An outstanding example of two-government ownership and control of a government corporation in the field of transportation is the Port of New York Authority. This corporation was created by legislative action of the states of New York and New Jersey authorizing an agreement or compact between the two states, which became effective, with the approval of Congress, in 1921.

Some of the government corporations mentioned above will be examined in greater detail later in this paper. Attention now will be directed briefly to an experiment being made in the use of government corporations in international cooperation in financing economic enterprise. The possibilities of such use are being explored by the international Bank for Reconstruction and Development (commonly known as the "World Bank") and the International Monetary Fund.

The nature of this experiment is shown in the third annual report of the International Bank for the year 1947-1948 which summarizes "the result of its first year of active operations." Statistically, 47 countries were members of the Bank as of August 31, 1948, its assets, as of June 30, 1948, totaled more than 1.9 billion dollars and loans outstanding were about half a billion ($470,000,000).

Some of the loans made by the Bank to Western European countries were granted for specific investment in transportation facilities. Such loans are made either to borrowing governments (or their agencies) or to private enterprises and of course vary in amount. Examples include: (1) a loan of $12,000,000 to four Dutch shipping companies to finance the entire purchase price of six cargo ships, costing $2,000,000 each; (2) a French loan (amount not known to the writer) to provide funds for the purchase among other things, of "tankers, general cargo vessels, river barges, tugs and light-ships; transport aircraft and spare engines; locomotives and parts for the construction and repair of locomotives. . ."; and (3) a loan of $12,000,000 to Luxembourg to finance the purchase of "equipment for a steel rolling-mill; locomotives and other railway rolling stock."

The International Bank has also agreed, under date of March 25, 1948, to a commitment for a Chilean loan of $13,500,000 for hydro-electric development in Chile. This loan is subject to a guarantee by the government of Chile, to be made effective by legislative enactment. The borrower is a subsidiary of a government corporation.

"The purpose of the loan is to provide foreign exchange for the construction of additional hydro-electric plants and related transmission lines, for the installation of additional generating units in existing plants and for the installation of pumping equipment for irrigation. The existing supply of power is insufficient to cover present and prospective needs."

The writer wishes to make clear that he holds no brief *in this paper* either for or against public ownership and operation as such. The questions at issue are: (1) If governments adopt a policy of public ownership and operation should they under any circumstances make use of government corporations to carry that policy into effect? (2) If governments do use government corporations what safeguards should be provided to make that policy effective? These questions will be discussed under the following section titles: *Section II.* Origin of Government Corporations. *Section III.* Characteristics of Government Corporations. *Section IV.* Control of Government Corporations. *Section V.* Government Cor-

porations in American Public Utility Industries.

II. Origin of Government Corporations

Government corporations are products of economic, social, and political evolution. They have appeared in this country and in others under a variety of circumstances and for a variety of reasons during the past 150 years. They have grown rapidly in number and in relative importance in the volume of business transacted and services rendered during the present century. They are products, in part, of increasing demands upon government for economic direction and assistance from large numbers of people who are exposed to the vicissitudes of profit and loss in a system of large-scale capitalistic enterprise.

Measured in terms of the average-attained length of life of the existing governments of the world, the government corporation is an old political invention. In this country, the idea was given at least partial expression in the Bank of North America, chartered by the Continental Congress in 1781, the First Bank of the United States, chartered by the Congress of the United States in 1791, and the Second Bank of the United States, chartered by Congress in 1816.

Government corporations vary and will continue to vary in the political motives which brought them into existence, in those which now control them, in the functions which they perform, and in their expectation of life.

The government corporation, as we know it today, is typically a device for use in a mixed system of government and private enterprise. It did not originate in Socialist philosophy, although individual Socialist leaders have urged its adoption in the past and the Socialists of of Britain are now making use of it in their program of nationalization for railroads and other key industries. In the United States government corporations have been sponsored by both Republicans and Democrats and approved by conservatives as well as by liberals or radicals in both parties. The Reconstuction Finance Corporation was created in President Hoover's administration in January 1932. In Britain the Central Electricity Board and the British Broadcasting Corporation were established by a conservative government.

The available evidence indicates that the government corporation is essentially an agency employed in political democracies for the purpose of operating a workable compromise between the defenders of uncontrolled capitalism and the advocates of radical change. It is adapted to serve within a framework of legislative control over its policies and may be made accountable and responsible to both the executive and legislative branches of government for the funds entrusted to its care.

III. Characteristics of Government Corporations

How does a government corporation differ from non-corporate agencies of government? In what respects does it vary from government departments, bureaus, commissions, divisions, unincorporated "authorities" and unincorporated "administrations" charged with the operation of government-owned economic enterprises?

Roughly stated, a government corporation is (or should be, according to its advocates, if it is to serve its purposes) an autonomous agency of the government. Its directors, trustees, or other principal officers are appointed by government or subject to the approval of government; such funds and such guarantees of security issues as government deems necessary are given the corporation at its creation and later; general civil

service laws may or may not be applied to the selection of employees.

The outstanding characteristic of autonomy is the possibility of flexible, adaptable, self-directed operation within a broad field of responsibility and authority without detailed, rigid prescription laid down in advance or currently by the executive or legislative branches of the government. If government uses wisdom in establishing policies for the corporation and in making appointments to the key offices in command, the corporate device, its proponents assert, may be much superior to direct government operation as an agency for transacting the public business.

The typical government corporation is autonomous because it has the characteristic powers of legal entity which a private business corporation possesses. It is usually created by special acts of incorporation. Some of the federally-owned corporations, however, were originally chartered under the incorporation laws of the District of Columbia, or of some of the states as, for example, Delaware and Maryland. Such corporations, if wholly owned by the federal government and still in existence, were required by the Government Corporation Control Act of 1945 to "take the necessary steps to institute dissolution or liquidation proceedings on or before" June 30, 1948. They might, if they desired, apply for reincorporation under an Act of Congress on such terms as might be authorized by such act. There is no general federal act for the incorporation of government corporations.

Again, the government corporation, like the private business corporation, has a corporate name under which it operates as a legal entity. Typically, it has power of succession in its corporate name and under it may sue and be sued, adopt and use a corporate seal, adopt, make and repeal bylaws, and within the scope of its authority, make contracts, acquire property, hire experts, attorneys, skilled and unskilled employees, and carry on such business as has been delegated to it.

Unlike the private business corporation a government corporation may or may not have shares of capital stock. If originally created as a wholly-owned government corporation, the act of incorporation may declare the fact of ownership and provide for a board of directors or trustees to administer the enterprise without providing for any capital stock. This is the case with the Tennessee Valley Authority. On the other hand, the incorporation act may provide for subscription to the entire capital stock of the corporation by the government creating it, as in the case of the Reconstruction Finance Corporation.

A government corporation which is acquired by purchase from private owners may continue to have capital stock in its financial structure, although it is completely owned by government and there is no authorization, and no intention to seek authorization, to issue additional stock. The Panama Railroad Company is an example. This company, organized as a private enterprise by American capitalists, was created in 1849 by an act of the Legislature of the State of New York. Control of the company passed subsequently, by purchase of stock on the New York Stock Exchange, to the French Panama Canal Company. The controlling stock (68,863 of a total 70,000 shares) was purchased by the United States Government early in the present century under an Act of Congress, approved by President Theodore Roosevelt, June 28, 1902, from the New Panama Canal Company. Later the remainder were purchased, so that the Panama Railroad Company is a "wholly-owned Government corporation" and subject as

such to the federal Government Corporation Control Act of December 6, 1945. All of the shares of the company, as a New York corporation, were held by the Secretary of War except for 13 shares held in the names of the 13 directors provided for in the New York Charter.

It is apparent from the foregoing example that sometimes the existence of capital stock in the financial plan of a wholly-owned government corporation may be a carry-over from a previous status of private ownership. In the case of mixed-ownership government corporations the practice of using capital stock to represent the contribution of capital and the division of control as between government and private enterprise would seem to be a matter of public convenience if not of compelling public necessity.

Government corporations vary as to the other sources which they are permitted to use in obtaining funds. They may receive direct appropriations by legislative act; they may borrow through the issuance of bonds and notes; they may use receipts from the sale of assets; they may use operating revenues; and they may receive income from other sources, such as interest on investment.

Government corporations are usually managed by boards of directors or trustees who assume full responsibility for the enterprises entrusted to them. In some cases, however, a member of the cabinet or some other public official of high rank exercises general supervision and control over the corporation. Generally the choice of directors is left almost entirely to the appointing executive and and may or may not be subject to legislative approval. It may be provided in the corporate charter that directors shall have no adverse interests, that they shall meet specified requirements as to citizenship, and that they shall give their full time to their positions, at a specified annual salary. Charters and enabling acts differ in these respects.

There is active debate in the United States, Britain, and elsewhere over the composition, selection and control of boards of directors of government corporations and with respect to organization and personnel problems in their administration and management. What salaries are needed to induce competent men to serve as directors? How many should there be? Should some be permitted to serve without compensation? Should salaried directors give full time to their duties or should some of them give only part time?

IV. Control of Government Corporations

The control of corporate enterprises, whether private or governmental, is both internal and external. There has been a long development of general and special incorporation acts for private corporations in the United States and, in certain fields, of measures for their regulation by state and federal agencies. There has been no comparable development of general or special incorporation acts for government corporations, although there have been some beginnings in the federal banking systems.

The first serious attempt of the federal government to provide for the general control of government corporations is found in the Government Corporation Control Act of December 6, 1945. This Act provides for financial control of these corporations and declares it to be "the policy of Congress to bring Government corporations and their transactions and operations under annual scrutiny by the Congress and provide current financial control thereof."

Advocates of the bill pointed out that, since 1920, "government corporations have assumed a role of increasing importance in the financial structure of the

government" but that "no over-all financial coordination and control of such corporate activities" has been developed. The bill was vigorously supported by Senator Byrd of Virginia and others. Its objectives were endorsed by President Truman, the Comptroller General of the United States, the Director of the Bureau of the Budget, and the Treasury Department. Its necessity and practicability were questioned by some of the spokesmen for government corporations but their objections, in general, were overruled.

Leaders of the British Labor Party, as evidenced by the writings of Ernest Davies and other of their spokesmen, are as interested as our federal administration and Congress are in holding government corporations to full accountability and responsibility for the funds and revenues entrusted to their care as well as in developing efficient and economical policies of industrial management and personnel relations in the public corporations which they have inherited and in those which they are now establishing. In this connection it is pertinent to ask whether alternative patterns for incorporation might not be devised for consideration with a view to simplicity and definiteness in legal form and such uniformity as is practicable.

V. Government Corporations in American Public Utility Industries

In the concluding section of this paper attention will be directed to the following questions:

1. Under what circumstances are government corporations chosen as agencies for the administration of government-owned public utility enterprises rather than non-corporate government agencies?
2. Under what circumstances, if any, should government corporations be substituted for non-corporate agencies now in charge of the administration of such enterprises?
3. Under what circumstances, if any, should the corporate form be abandoned and the administration of government-owned utilites be given (or restored) to non-corporate agencies of government?
4. What are the principal problems of personnel selection and personnel management in government corporations in the public utility industries?
5. How are these problems being met?
6. Finally, how far can government go in controlling and regulating government corporations in public utility enterprises without destroying the essential advantages of the corporate form?

Taking up the first question, the circumstances under which government corporations appear in the public utility industries, it would seem that a number of variable factors should be taken into account. One is the general lack of familiarity in the United States with the nature and characteristics of the government corporation. The wisdom or the folly of using this device cannot be debated if no one knows anything about it. This is probably one reason why municipalities and states, with some notable exceptions, have in general not even considered its adoption for the administration of public utility enterprises.

Another factor is the size of the utility enterprise and the area to be served by it. It would be difficult to convince most supporters of municipal ownership of public utilities in American cities that the government corporation is in any way superior to direct control through a city department of utilities as an administrative device. Most Americans favor municipal ownership of water supply utilities—unless the problem requires public ownership on a larger scale. Some favor municipal ownership of electric utilities and city transit systems.

When the area to be served is large and when it comprises two or more political jurisdictions the case for the government corporation becomes stronger. It may be the only feasible plan. Who can sug-

gest a practicable alternative to the government corporation for the administration of the Port of New York, the Tennessee Valley project, or the Chicago transit system?

The circumstances, of course, are different in respect to such multiple-purpose federal power projects as Boulder or Hoover Dam, Grand Coulee and the Bonneville Power Administration, whose administrator, Dr. Raver, is to discuss this paper. All of these projects transcend state boundaries, involve navigible waters subject to paramount federal authority and are directed to the achievement of flood control, reclamation, conservation and other purposes which have long been objectives of the federal government in the Rocky Mountain and Pacific coast states. The generation of electric power is intended to make the project "a self-supporting and financially solvent undertaking," as stated in the Boulder Canyon Project Act (Trachsel, *Public Utility Regulation*, 1947, p. 442) or, in other cases, to aid in its support as well as to provide needed supplies of electric energy at low cost consistent with large scale production and transmission.

These federal power projects of the West and the Southwest were constructed and are operated under the authority of major executive departments of the federal government. The Department of the Interior, with its long-time experience in reclamation and conservation, and its authority over the regions served by these projects, was a logical choice to participate in their construction and administration as a government agency. The same was true of the United States Corps of Engineers of the War Department which is charged, among other things, with the supervision of investigations and of improvements for navigation, flood control, and power development on rivers and harbors.

A choice which is logical at the time when it is made may cease to be logical, or to seem logical, when circumstances change. Would it not, after all, promote the public interest if government corporations were now substituted for the non-corporate agencies of government at present administering these projects? Would there not be a substantial gain in "administrative and financial flexibility" from this transformation?

We have thus arrived at a consideration of the second question stated above. It is likely to become a subject of lively debate before the Eighty-first Congress with the probable re-introduction of a bill to create a Missouri Valley Authority similar to the TVA, sponsored by Senator Murray of Montana and others in Congress.

Bills to establish a Missouri Valley Authority were introduced into the Seventy-eighth, the Seventy-ninth and the Eightieth Congress. Missouri valley development is a multiple-purpose project of flood control, irrigation, power development, and, to a limited extent, navigation. Under the Flood Control Act of 1944, the development program is administered jointly by the United States Corps of Engineers of the War Department and the Bureau of Reclamation of the Department of the Interior. Enactment of the proposed Missouri Valley Authority bill would substitute administration on a regional basis, as in the TVA, but over an area many times as large as the Tennessee Valley. It would also substitute, for better or for worse, a single control for a divided control and result, if its spokesmen are to be believed, in a more comprehensive and more effectively integrated program of development.

The problem of Missouri Valley development is mentioned here because it brings to a focus the considerations which

govern the choice of corporate or non-corporate agencies for the administration of government-owned power, navigation, and multiple-purpose projects. Dr. Trachsel has treated this subject informatively and concisely in his textbook, *Public Utility Regulation*, published in 1947 (Richard D. Irwin: Chicago).

The third question posed for the concluding section of this paper is: Under what circumstances, if any, should the corporate form be abandoned and the administration of government-owned utilities be given (or restored) to non-corporate agencies of government? At the present time there seems to be no effective movement for such transfers or restorations of authority. Investigations and the recommendations of the Bureau of the Budget in administering the Government Corporation Control Act may throw some light on this question. It is suggested, also, that the recommendations of the Hoover Commission (which the writer has not had an opportunity to read at first hand) might be studied. What, for example, would be the effect on the efficiency and economy of non-corporate government agencies if the Army Engineers, the Bureau of Reclamation, and the Federal Works Agency were all merged into a new Department of Public Works? Would such a merger, from the standpoint of public interest, provide an acceptable alternative to Senator Murray's proposed Missouri Valley Authority? Would it check the further use of incorporated river valley authorities like the TVA?

The fourth and fifth questions may be considered together. Briefly stated, they are: (1) What are the principal personnel problems in government corporations in the public utility industries? (2) How are these problems being met?

Government corporations in the United States, Canada, the United Kingdom, and other countries taken in the aggregate, have had a substantial amount of experience with personnel problems in the past quarter century. Various experiments have been made in personnel selection and personnel management. There is a small but growing literature in this field, consisting chiefly of reports, pamphlets, articles, and book chapters.

Fundamentally, the personnel problems of government corporations, as we know them today in the public utility industries, are those of large-scale enterprise. This is true whether we are thinking of the Reconstruction Finance Corporation, which has been an important source of funds for railroads and other public utility industries, or the Canadian National Railways, the Tennessee Valley Authority, or the Chicago Transit Authority. In this respect, government corporations in the public utility industries, privately-owned public utility companies, and non-corporate government agencies —like the Bonneville Power Administration—have similar problems. Such matters as selection procedures, job analysis, job specifications, placement planning, absenteeism, apprentice and interne training, merit ratings, promotions and transfers, and exit interviews are matters of common interest in large-scale enterprises, whether private or governmental.

Important contributions also are being made by specialists in business administration, as well as by political scientists, to an examination of the problems of top-level management of government enterprises and their solution. There is evidence that the principles of business organization and management, as developed in private enterprise, are well understood, if not always followed, in the administration of government enterprises. Some government corporations, like the Tennessee Valley Authority, appear to have made an excellent record

in personnel management and top-level executive efficiency.

Employees of government corporations are employees of the governments which have created the corporations. As a matter of law, they may or may not be subjected to the competitive civil service requirements applying generally to other government employees. If exempted from the provisions of a general civil service law, the corporation may be directed to set up a merit system of its own, with selection based upon comparison of qualified candidates and promotion, demotion, transfer, or retention in service determined by considerations of merit and efficiency. This was done by the act creating the Tennessee Valley Authority.

Do government employees in general have what has sometimes been called the "government stroke?" Is there a "civil service point of view" which, because of regulations protecting tenure, defeats managerial attempts to improve efficiency and thereby makes for mediocrity in the public service?

Many workers in the public utility industries are members of labor unions. Their right to self-organization for purposes of collective bargaining through representatives of their own choosing is firmly protected by federal law. For this reason, as well as for other reasons not compelled by law, it is essential for government corporations in these industries to establish sound procedures for collective bargaining and the cooperation of labor and management.

The Tennessee Valley Authority has received much publicity for its recognition of this fact in its employee relationship policy and, no doubt, deservedly. It would be interesting to hear of the experience of other government corporations in the public utility industries in this matter. It would be interesting, also, to learn what procedures non-corporate agencies of government in charge of federal power projects have established for collective bargaining and labor-management cooperation.

The question is sometimes raised as to whether labor relationships cannot be more equitably managed in public utility industries through a government corporation than through a non-corporate agency of government. Is it not desirable, after all, to put government corporations on a parity with private corporations in the administration of collective bargaining laws applicable to all employers? Or is it more equitable to all concerned to provide for direct non-corporate administration of government enterprises subject to specialized laws on this subject? This might become an important question if government ownership of business enterprises in the United States were to increase substantially.

The sixth and final question is: How far can government go in controlling and regulating government corporations in public utility enterprises without destroying the essential advantages of the corporate form?

The general principle may be summarized as follows. A government corporation, if it is to serve its purpose as such, should be an autonomous agency, accountable to government within a broad field of responsibility, but flexible, adaptable, and self-directed in its operations. It should not be subjected to rigid, detailed prescription laid down in advance or currently by the executive or legislative branches of government. If it is subjected to such control, as may well be in the public interest in many cases, the agency should not be called a government corporation and be given an empty shell of corporate entity.

The application of the principle above stated may be made with respect to (1)

proposed new government corporations or (2) existing government corporations. The first class is illustrated by Senator Murray's bills for a Missouri Valley Authority and by suggestions that transit authorities like those recently created for metropolitan Boston and Chicago be established in other metropolitan communities. The second class is illustrated by the legislative history of the Government Corporation Control Act of 1945, previously mentioned, and by the experience of the federal government in administering this act.

In conclusion, it will be emphasized again that the government corporation is only one of several choices as an agency for the administration of government-owned public utility enterprises. The Bonneville Power Administration, for example, is a non-corporate agency of the federal government and appears to be as firmly established as the incorporated Tennessee Valley Authority.

Discussion of William A. Duffus' Paper†

By PAUL J. RAVER*

IN evaluating the place of the government corporation in the public utility industries—or in any other activity for that matter—it is important to consider the reasons why the corporate device has heretofore been used and, so far as the future is concerned, to examine the extent to which the corporate device is a necessary or desirable adjunct to the carrying out of any particular activity in the context of present-day restrictions on its use and of alternative methods of accomplishing the objectives normally associated with corporate existence. Before embarking upon this brief examination of these questions, I should like to express my appreciation for the assistance of Mr. Norman A. Stoll, General Counsel of the Bonneville Power Administration, who has been more directly concerned with the details of this problem as they relate to the present and future operations of our organization.

In order to broaden our perspective on these points, I want to digress momentarily to talk about all corporations, not merely government corporations. Also, in line with this approach and before going into any specific discussion of the place of the government corporation in the public utility industries, I should like to emphasize three salient aspects of the corporate device, whether that device is applied to a governmental or other unit. First, as Mr. Duffus has pointed out, perhaps the most characteristic aspect of the government corporation, or of any corporation, is its status as a separate legal entity—although the corporate device is not the only means of assuring the essential attributes of a separate entity in particular circumstances either in private business or in government. Second, an examination of the history of the corporation—both public and private—will also reveal that this preoccupation with the creation of a separate entity almost always has been related to the fiscal operations, property-holding status or business responsibility of the organism for which was sought a legal recognition of its existence as a separate entity. Third, while the corporate device throughout its history has been recognized as a special privilege justified by some social purpose, and while successive efforts to effect some social control over its use generally have been directed to curbing its abuse rather than to elimination of the device as such, curbs on its abuse have sometimes inhibited the scope of its use—especially to the extent that alternative and equally acceptable methods were open for achievement of legitimate ends which previously might have been sought through use of the corporate device.

Perhaps the earliest examples of the corporate form in Anglo-American law may be found in the city charters which the Crown granted in the later Middle Ages. To be sure, the town—as an aggregation or concentration of craftsmen, traders, or other inhabitants—existed prior to the granting of charters, but typically it developed under manorial patronage under a feudal system whereby the collection and payment of taxes to the Crown was a personal responsibility of the lord. The granting of charters to towns (while also reflecting perhaps more fundamental political and social changes) marked the undertaking of a collective

† On "The Place of the Government Corporation in the Public Utility Industries." See p. 29, footnote †.

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responsibility of the municipality for such taxes and was accompanied by the development of considerable autonomy in the matter of handling the details of this fiscal process. Subsequently, corporate existence also was permitted to religious and charitable organizations as a device to allow the resulting entities to own and manage their properties in perpetuity. During this period the guilds also enjoyed a status in the nature of a corporate existence which superimposed a self-governing commercial community on the feudal order.

These very early examples of the corporate device are interesting not merely to show that from the outset it was a method of taking care of special fiscal, property, and business problems which were otherwise hard to reconcile with the then orthodox means of organizing economic and political life, but also to indicate that at the outset it also was in the nature of a special privilege granted for the purpose of furthering public objects—a concept which still permeated the use of this device by the great Colonial trading enterprises notwithstanding the latter's private profit-making aspects. (It is of interest in this connection to note parenthetically that even at the beginning of the nineteenth century, the corporate device in this country was used almost exclusively for the purposes of carrying on functions now commonly undertaken directly by public bodies or by businesses commonly recognized as "affected with a public interest"—for example, the ownership and operation of canals, bridges, turnpikes, water works, and, to a lesser extent, banks and insurance companies. In fact, only a few years earlier, Adam Smith had written that "the only trades which it seems possible for a joint stock company to carry on successfully, without an exclusive privilege, are those, of which all the operations are capable of being reduced to what is called routine, or to such a uniformity of method as admits of little or no variation," and he mentions banking, insurance, canals, and municipal water works as examples.)

The joint-stock Colonial trading monopolies probably mark the real beginnings of the private corporation in its major aspect as a capital-raising device. The joint-stock company was an invention mothered by the necessity for assembling capital resources far in excess of those available to would-be promoters and managers themselves as individuals or partners, and its division of the ownership interest into shares permitted the gathering together of relatively small resources of a large number of individuals without diluting materially the power of the promoters to control and manage. With the inception and flowering of the industrial revolution—with its increasing specialization, standardization, mechanization, mass production approach, and the attendant need for large aggregations of capital required for the carrying on of productive processes with some degree of centralized control—the corporate device came into its own. Recognition of a social utility of this capital-raising device, in its aspect as a separate entity with limited liability of its multiple owners, was reflected in general incorporation statutes, first in this country and later in England. From a gadget which had facilitated colonization, and which in the the United States of 1800 was still limited to certain public service enterprises and a bare half-dozen manufacturing companies, the corporate device has become a dominant factor in our system of property tenure and in the ordering of our economic life. Throughout this development, the private corporation always has had a *practical* significance as a sort of financial "pocket." Because of its more

or less unique characteristics as an artificial entity, with limited liability of its multiple owners, with a normally perpetual status, and with a resulting facilitation of the transferability and diversification of investment, it has at various times provided promoters and managers the means to accomplish what they could not do as individual enterprisers or as a partnership of individuals—whether the practical ends sought were access to capital, segregation of control from ownership and its resulting concentration of managerial responsibility, or other objectives involving financial, property or business relationships. Similarly, throughout this period, other devices, such as the trust, have been used to the same end, and the corporate device has fallen into disuse in situations where there no longer existed any premium on its use.

I have dwelt at this length on these examples of the use of the corporate device outside the field of government corporations in order to underscore the fact that the scope of the use of the device generally has been dictated by *practical* considerations from the viewpoint of those who have had occasion to make use of it, and to emphasize the likelihood that its use for the purpose of carrying out government responsibilities should be approached from the viewpoint of its *practical* necessity or utility in light of restrictions on its use and the availability and convenience of adequate substitutes. Again, the premium on its use is likely to be dictated by the extent to which it permits objectives not otherwise attainable—by the extent to which it is a necessary means for facilitating the creation of new patterns of business-type operations in an environment of laws and administrative practices which appears to be hostile to the business approach.

The use of the corporate device for carrying out federal government functions is almost as old as our government itself. You will recall Mr. Duffus' reference to the fact that the first Bank of the United States was created in 1791 by Congressional authorization. There followed an early judicial determination of the validity of the corporate device as a government instrumentality in the case of *McCulloch* v. *Maryland*, in which Chief Justice Marshall stated: "The Government which has a right to do and act, and has imposed on it the duty of performing that act, must, according to the dicta or reason, be allowed to select the *means* . . . ." While the device has been used by the government since that time on a number of occasions, particularly to carry out business-type operations, especially in the financial and banking field under the fiscal powers of the Congress, really extensive use of the device occurred only in reference to the government's handling of the two war emergencies of the present century and the economic emergency of the thirties—that is, particularly at times when there was a special premium on administrative flexibility and absence of external restraints. At the time of enactment of the Government Corporation Control Act in 1945, the development of the corporate device had grown to a point where there were something like 100 separate federal government corporations with gross assets approximating thirty billion dollars (including inter-agency accounts), with a total government interest in such corporations amounting to more than thirteen billion dollars.

What were the occasions for the development of this means of carrying out government responsibilities?

Undoubtedly, with the interjection of the government in times of crisis into business-type operations which previously had not been considered a prerogative of government, an important factor has

been a feeling that the corporate device which had served management so well in private business was necessarily a logical solution to the problem of a proper mechanism for carrying out such operations. While this psychological factor undoubtedly has been of some significance, and may still be of some importance in selling to the public a conceptual relationship in terms which are readily understood in the business world and by the public generally, more specific and tangible reasons have at one time or another attached to the use of the device. I might review a few of these.

1. Undoubtedly, at least so far as the federal government is concerned, perhaps the major factor in the use of the corporate device, as a vehicle for carrying out a government responsibility involving a business-type operation, has been the belief that such use would facilitate flexibility in the administration or financing of the agency designated to conduct such an operation—that is, that it would eliminate the "red tape" commonly attributed to normal governmental processes. I shall shortly return to this point, to elaborate on it and consider its validity under existing law.

2. The government corporation may be a particularly helpful device to differentiate financial interests in it where there is a mixed government and private financial interest, as in the case of certain financial institutions. This situation has been recognized in the Government Corporation Control Act in special provisions designed to take care of what are called "mixed-ownership" government corporations—i.e., the Central Bank for Cooperatives, the Regional Banks for Cooperatives, Federal Land Banks, Federal Home Loan Banks, the Federal Deposit Insurance Corporation.

3. The government corporation, as in the case of the Panama Railroad, may reflect merely the continuation of an entity established by private enterprise at the time the activity in question was launched under private auspices.

4. The corporate device is sometimes handy in superimposing upon an existing and subsisting political structure an instrumentality whose operations are not coterminous with existing political boundaries. We have such an example in the case of the Port of New York Authority, a corporate instrumentality representing in effect an enterprise in which states are equal partners. We have antecedents for this approach in the case of certain municipal corporations enjoying the taxing power, such as irrigation, drainage and school districts, in which the citizens of a part of a subsisting political entity, or of more than one such entity, in effect are partners in an enterprise whose service area is not necessarily related to the boundaries of existing political subdivisions. In the case of the Chicago Transit Authority, mentioned by Professor Duffus, I am not sure that this approach was controlling. Whether or not this approach has a broad applicability to the rendering of public utility services by a public body at the local level, it may be noted that municipally-owned, unincorporated water and electric utilities commonly render services, without serious complications, to inhabitants of contiguous areas outside the boundaries of the municipality. Also I question whether this approach is persuasive in reference to the performance of operations recognized as a responsibility of the federal government, since such operations perforce extend over state lines. In other words, so far as this factor is a *reason* for the establishment of a government corporation, I do not see that it is necessarily applicable to such a regional agency as the TVA, assuming its functions are recognized as a federal respon-

sibility, unless, as in the case of certain regional banking institutions, it is desired to reflect local representation on the directorate by means of appropriate charter provisions—although in that case there may be raised a question as to the watering down of the executive responsibility within the federal government.

I have alluded to the probability that the major reason for the corporate device in certain government activities has been to enable the agency in question to use commercial methods and to conduct its operations, particularly fiscal operations, with a freedom supposedly inconsistent with accountability under established normal principles of audit and control over government transactions. As you know, there are a host of detailed statutes, rules and regulations, and administrative procedures, which are peculiar to and normal to the conduct of governmental affairs, and these apparently have evolved without any particular reference to the special problems inherent in attempting to conduct a business-type operation. Perhaps finance has been the major field in which relief has been sought in recent years through the corporate device. The Budget and Accounting Act of 1921, and other acts relating to the expenditure of public funds, together with the body of rules and regulations and administrative practices which have grown up around this legislation, have had the entirely praiseworthy purpose of trying to bring some order into the budget and fiscal process of the federal government, and especially to achieve some balance between outgo and receipts for each fiscal year. More specifically, this body of law and practice has been designed to prevent overexpenditures, to prevent misapplication of funds, and to develop budgetary information for the federal government in order to facilitate the over-all intelligent handling of its fiscal affairs, especially in the planning for federal expenditures as a whole on the basis of programs balanced in terms of national needs.

While I would not argue with this approach as applied to normal government operations, nor deny that it has more general relevance to governmental activity if tempered in its application to business-type operations, the fact is that none of these specific objectives is of first importance in the conduct of a business-type operation, and their collective effect is to impress upon the government official a preoccupation with the necessity for making sure that every cent is expended in accordance with the specific objects for which it has been appropriated and in every respect consistent with such substantive legislation (strictly construed) as may be applicable to the government in general and his agency in particular. The effect of this over-cautious preoccupation with relatively unimportant detail unquestionably is to complicate the carrying out of business-type functions, since a common-sense business approach to expenditures must be subordinated to a consideration of the risks inherent in a detailed audit of each transaction pursuant to this system of a detail accountability in which broad program objectives are not necessarily pertinent.

In running a business-type operation, whether government or private, one of course wants to manage the funds in his charge so he won't expend too much or spend them improperly, but in a different sense than that which characterizes normal government fiscal processes. These processes are not relevant to efficient management, which requires techniques that in particular instances may or may not be easily reconciled with the procedures normally required. The business objectives generally are to know

what your financial condition is, what your results are at the moment, where you are headed, and how you are liable to wind up, and in general to provide such information as may be necessary to manage operations efficiently from year to year—all in reference to, and subordinate to, the major objective of carrying out the basic purposes of the enterprise.

A related difficulty is the fact that a body of law and practice which is predicated in general upon an annual balancing of annual outgo and revenues has not always been adaptable to handling the special problems of a business-type operation, such as ours at Bonneville, where an agency is in the process of putting together a vast productive enterprise in which the developmental period may require an annual investment of capital funds far in excess of annual revenues.

By earmarking an agency as a corporate entity, and by authorizing a charter which included powers appropriate to the purpose, it has been possible to a considerable degree to cut the agency free from the restrictions normal to government activity, and undoubtedly the creation of a separate entity is an easy way to carve out an area intended to be exempt from the general pattern of laws and procedures affecting government. This was particularly true while it was still possible for certain government agencies to organize corporations under state laws with charters so broad as to place virtually no limit on the means by which authorized purposes of the government might be carried into effect.

The extent to which the government corporation can be so used, however, was considerably circumscribed by enactment of the Government Corporation Control Act in 1945, following increased recognition of a necessity for exercising increased public control over government corporations. This Act—quite properly in my opinion—sought to effect some reasonable reconciliation between a desirable degree of administrative flexibility, as commonly considered to be an attribute of the corporate form, and a desirable degree of executive and legislative control over the corporation's budget and fiscal operations, without requiring an all-the-way application of the restrictions which I have mentioned as characteristic of most government activities.

Having mentioned the limited restraints which the Government Corporation Control Act placed upon the corporate device, I want to emphasize that there is no magic in the device as such. If government corporations in the past have been able to exercise broad powers free from restraint, it is because legislation enacted by Congress permitted such powers. A government agency—corporate or non-corporate—can exercise only such powers as are specifically granted to it, or as may be implied from an express grant of powers. Congress can curtail such powers, and it has. Likewise, Congress can grant to a non-corporate agency powers which are normally associated with the concept of corporate existence. While a conventional approach to the problems of conducting business-type operations within the framework of government might suggest the creation of a government corporation in order to secure the desired flexibility for the carrying out of such operations, I see no reason why all or most of the same ends cannot be achieved pursuant to appropriate statute without the necessity of formal incorporation. In the case of an agency which has more or less successfully conducted such operations over a period of years, there may be persuasive reasons for not disturbing its organic legislation more than is absolutely necessary—for not unduly disturbing the pattern of activity based upon such legislation.

Without attempting to cover the range of restrictions with respect to which the corporate device is often presumed to present some special advantage, I should like to cite just a few examples illustrative of the point I have just emphasized. The civil service statutes and regulations, for example, are often suggested as illustrative of restrictive law from which escape may be had through the corporate device. I do not wish to enter into any controversy as to whether these laws are or are not unduly restrictive, but the fact is that they are applicable to the employees of a government corporation unless the corporation is specifically excepted from their applicability, and conversely there is no reason why Congress—if it sees fit to do so—cannot exempt from their application an agency which does not enjoy corporate existence. Likewise, in the field of finance, relief from onerous general requirements does not depend upon the existence of the corporate form, but rather upon the *power* of the agency (whether incorporated or not) to control its own expenditures—that is, to determine the character of and the necessity for its obligations and expenditures, and the manner in which they shall be incurred, allowed and paid, subject to such executive or legislative control as might be appropriate to the conduct of a business-type operation.

Similarly it likewise may be fallacious to assume that the corporate device, in and of itself, in addition to permitting the agency to exercise greater control over its revenues and expenditures, otherwise will facilitate the financing of the corporation's activities. This assumption is particularly doubtful in the case of a corporation engaged in a major capital expansion phase extending over a period of years. Even if a government corporation has control over its revenues, the revenues are not necessarily sufficient to permit the carrying out of the agency's responsibilities under such circumstances, and the Congress is likely to look to the volume of unexpended revenues in determining the amounts which should be appropriated for capital expansion. We have seen this in the case of the TVA. On the other hand, the corporate device is not a *sine qua non* to the financing of government enterprise outside of the appropriation process. For example, there is no reason why revenue bonds cannot be issued by an instrumentality not formally enjoying a corporate existence. Such bonds frequently are issued by municipal and state governments, under a concept wherein the entity securing the obligations is a fund derived from revenues resulting from the operation of a revenue producing project. Similarly, there is no reason why a non-corporate entity could not, subject to proper public control as to fiscal policy, borrow money from the Treasury through public debt transactions.

As Mr. Duffus has pointed out, we at Bonneville do not enjoy the corporate existence, even though we have many of the attributes of a business enterprise. Certainly we try to conduct our affairs in a business-like manner. We are repaying with interest the government's investment in facilities properly allocable to power, as well as some of its investment in irrigation, and in addition we return a tidy sum to the Treasury each year in the nature of a profit on our operations. We have many of the problems which characterize the operations of a big private utility corporation, including most successful collective bargaining arrangements with labor. Amendments to the Bonneville Project Act enabled us to effect these collective bargaining activities. (I might mention in this connection that our collective agreement was the first to be consummated by a federal

agency operating entirely within the restrictions of Civil Service and General Accounting Office regulations.) We have set up our books in such a manner that they may be used both for traditional government budget and accounting purposes and for reflecting our operations as a business, under the prescribed rules of the Federal Power Commission, and in addition to our usual government-type voucher audits we have an annual commercial-type audit by an independent firm of certified public accountants which is one of the leading firms in the field of public utility accountancy. (This dual approach to our bookkeeping, incidentally, costs the government something like fifty thousand dollars extra each year, in addition to making the accounting process much more complex than it would have to be if only a straight business-type system were necessary—a situation which in the case of the TVA was recognized in the recommendation of the General Accounting Office to Congress that the government-type voucher audit be eliminated at TVA.)

On the other hand, except to the extent that expenditures may be affected by a very broad contracting authority and by the availability of a revolving fund (derived from and replenished by revenues) for the stated purposes "to defray emergency expenses and to insure continuous operation," we have no control over the disposition of our revenues. The broad contract authority and revolving fund which I have mentioned, however, have up to date been of limited use, perhaps largely because our lawyers have had a hard time determining with any certainty what it might be used for in the context of the normal appropriation and accounting processes to which we are subject. We are in the anomalous position of going to Congress every year to ask even for our day-to-day running expenses, notwithstanding the fact that we receive millions of dollars of revenues each year—all of which are turned over to the Treasury. We cannot even write checks in our own name. These deviations from normal good business practice are frankly a serious handicap to efficient management. I believe they should be changed, and we have spent much time evolving a legislative program which will provide a proper balance between administrative flexibility and appropriate public control. It is still too early to say exactly how this will be accomplished, or to say whether or not it will involve formal corporate existence for Bonneville, but, in closing, I should like to point out that the desired ends can be achieved by Congress with minor amendments to existing law without necessarily taking the formal step of setting up the Bonneville Power Administration as a corporation.

Book Reviews

Rural Life in Argentina. By Carl C. Taylor. Baton Rouge: Louisiana State University Press, 1948. pp. 464. $6.00.

Dr. Taylor states that the purpose of his book is to provide Americans with a report on more than a year's field work spent in studying rural life in Argentina and to provide Argentines with something approaching a text book in rural sociology. In the reviewer's opinion the first objective has been accomplished with considerable distinction when one considers the difficulties involved in writing a book on the rural life of a large and modern nation for which statistical data are fragmentary and field studies almost nonexistent.

Dr. Taylor is well aware of these difficulties and to overcome them traveled over 20,000 miles in Argentina visiting every major region of the country. In these travels he informally talked to hundreds of people of all social levels, and carefully interviewed some 150 farm families concerning their levels of living, home life, schools, churches and their community life. These data in combination with the information available from the last population census (1914) and the agricultural census of 1937, official reports of government agencies, and the writings of Argentine scholars constitute the factual basis of the book.

The book begins with a description of the twelve major type-of-farming areas of Argentina. This is followed by a description of the population of Argentina, its origins and its present demographic characteristics. A brief history of Argentina's agriculture is then presented, including the history of land settlement and a detailed analysis of present land ownership by type-of-farming areas. The next section deals with rural social organization, neighborhood, community, family life, and levels of living in the various rural cultural regions. This is followed by a description of government programs in agriculture, including colonization, resettlement and agricultural reform and farmers organizations. The book closes with a discussion of the farmers' place in Argentine culture.

Dr. Taylor's book is excellent proof that a trained and experienced observer can study a complex rural society systematically and produce an overall picture which will be meaningful and useful to outsiders as well as to members of that society. At the same time, his book is evidence of the tremendous need for numerous and detailed studies of almost every phase of the rural life of a country if anything more than a crude sketch is to be had of its rural life. Perhaps, rather than providing something of a text book in rural sociology for Argentines, Dr. Taylor has provided a descriptive framework about which future research in rural sociology in Argentina should be built.

WILLIAM H. SEWELL

University of Wisconsin.

The Freudian Psychology and Veblen's Social Theory. By Louis Schneider. New York: King's Crown Press, 1948. pp. 270, $3.25.

Many students of human conduct are paradoxically ill at ease with theories of human nature. While their researches are necessarily premised on some such theory they hardly know how to formulate or test one. Neither Freud nor Veblen was one of these. They tested and found wanting the assumption of classical economic and psychological theories that human conduct is always rational and hedonistic; Veblen then formulated, albeit sketchily, a theory of human nature as a frame of reference in his studies of "institutions." He believed that an "instinct of workmanship" and a parental instinct promote peace and productivity, while a predatory instinct fosters social conflict and war. These concepts became basic in his analysis.

In the first two parts of his volume, Professor Schneider analyzes and compares Veblen and Freud as representatives of their respec-

tive fields. In part three two attempts are made to integrate psychology and social theory: one re-examines the leisure class; the other aims, with an analysis of Nazidom, to carry on Veblen's own studies of Germany. These chapters, particularly "The Case of Modern Germany," are in several respects typical of the book as a whole. They contain some acute methodological observations and they illustrate the interaction of the theories of Freud and Veblen in actual social analyses.

ALFRED G. SMITH

University of Wisconsin.

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★ ★ ★

The Iowa State College has announced a Land Economics Institute from June 13 through July 20, 1949. The Institute is dedicated to a better understanding of our major land problems and what can be done about them. All courses in the Institute carry graduate credit and are designed to fit the needs of (1) educational and research workers, (2) administrators of land programs, (3) students working towards advanced degrees and (4) all people desiring a better understanding of our basic land problems and analyses of alternative solutions.

The following causes are included: Soil Survey and Classification, Conservation of Land Resources, Forest Land Problems and Policies, Recreational and Land Urban Use Problems, Livestock and Land Use, Special Problems in Soil and Water Conservation, World Resources and Industries, Economics of Agricultural Policy, Economics of Government Resource Use Programs, Population Problems and Policies, Advanced Land Economics, Land Valuations and Appraisal, Production Economics and a Special Seminar in Land Problems and Policies.

In addition to the above courses in land economics and related fields, a special seminar in Land Problems and Policies will be offered. This seminar will include lectures and discussions conducte by outstanding students of land problem from different sections of the nation.

A folder describing the Institute in more detail may be obtained upon request from the Department of Economics and Sociology, Iowa State College, Ames, Iowa.

SYMPOSIUM

Frontiers

of

HOUSING RESEARCH

Jointly Sponsored by

Committee on Housing Research,

Social Science Research Council

and the

University of Wisconsin Committee on the

Regional Planning Course

with the support of the

University of Wisconsin Centennial Committee

September 2 and 3, 1948

UNIVERSITY OF WISCONSIN, MADISON

OPENING OF THE SYMPOSIUM

RICHARD U. RATCLIFF, Chairman

THE basis for the broad interest in housing and in housing reform is, of course, the importance of raising the standard of living with respect to housing. If housing research is to be a worth-while activity, we should expect that it will somehow contribute to this end. It is not only that kind of housing research which seeks and finds answers to immediate problems which can make a contribution. That kind of research can also contribute which seeks to develop a fundamental understanding of the problems in the housing field and to construct a scientific system of thought. In the long run we shall better accomplish the pressing social objectives if we can base our remedies on a framework of principles and fundamental laws.

Who is there to concern himself with basic research in housing which, necessarily, is somewhat removed from the urgent issues of the day? Certainly governmental agencies are not so inclined nor does private industry find sufficient return from this kind of inquiry. If basic research is not undertaken by research foundations and by institutions of higher learning, it certainly will not be undertaken at all.

This Symposium has been organized and arranged for the purpose of discussing problems of basic research in the housing and urban land field. The sponsors believe that a scientific framework of underlying principles such as does not exist today is an essential foundation for a sound solution of our more practical housing problems. This, then, is the central theme of our discussions.

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Welcome from the University of Wisconsin

By EDWIN BROUN FRED*

IT is a pleasure to welcome so distinguished a group as yours to the Wisconsin campus. To some of you it is a homecoming. To others it is a visit to the place where some of the basic research in your field has been carried on. To all of you, I hope this will be a pleasant and profitable meeting.

It is fitting, indeed, that this housing conference is being held as a part of the university of Wisconsin's Centennial celebration. For there is a long tradition of interest here at Wisconsin in the land problems which underlie any profound consideration of housing. At first our attention was focused on agricultural lands and resources. But some of the earliest work on urban land problems was carried on by Professor Richard T. Ely of the University of Wisconsin.

Often when we look to the past and the great scholars of that day, we overlook the important work of those who today are busy carrying on research. Since Professor Woodbury will discuss the work done by one of the pioneers in land economics, I should like to mention, briefly, what the University of Wisconsin is doing today in this area of learning.

And may I point out parenthetically that we have attempted to practice what we teach at the University of Wisconsin. Our dormitories, in which you are living, are set up not only to house students. They are integrated in a plan of instruction which we hope makes them a social force in our university community, and imbues in the students quartered there values which they will carry into the world.

The success we have had in this area has encouraged us to develop our plan even further. It was my pleasure to introduce to our Regents last week a plan for the organization of the University of Wisconsin Memorial Division of Studies in American Institutions.

The plan, which the Regents approved in principle and recommended to the faculty and the University of Wisconsin Foundation for further development, calls for the construction of a group Residence Halls. (These Memorial Halls would provide more than housing for our students.) With the construction of the Halls, there would be organized in the University "The Memorial Division," made up of a faculty group to serve as the Senior Academic Staff and a group of graduate Memorial Fellows to serve as the Junior Academic Staff. These Memorial Fellows would serve as resident counselors in the Halls. And the Memorial Division, through its faculty and fellows, would provide leadership in the study of American Institutions. With the exploration of the basic values in American society an historical appraisal of those values would be made.

Thus, while we would be meeting, in part, the urgent physical need for proper student housing, we would be providing also additional facilities for guided group living, sponsoring a group of superior graduate instructor-scholars, and providing positive effort to send forth as graduates of Wisconsin men and women who are alert, informed, and contributing citizens.

I can think of no more fitting memorial for our university war heroes than this plan for a strong bond of fellowship in the study of the fundamentals of democracy which have made this country without equal in all human history.

And I can think of no more fertile field for the use of the social force which well-planned housing can provide than a college campus where the leaders of tomorrow are being trained.

But . . . to return from our practice to what we teach . . .

I think our continuing interest in land economics, and the various segments of that field of which housing is but one, is best demonstrated by our regional planning course. This is one of a number of courses at Wisconsin which function on an inter-departmental basis. It draws experts from several related fields and provides for the student an integrated pattern of study which covers the many facets of the problem. We are intensely proud of the fine spirit of inter-departmental cooperation in this and other fields in this University.

Wisconsin also offers a major in Urban Land Economics with study centered mainly in our Economics department, and a major

*President, University of Wisconsin.

in Real Estate with study centered in our School of Commerce.

Another course of study which is offered on an inter-departmental basis is our Light Building Industry Curriculum. Experts in engineering, commerce, and architecture combine their knowledge to provide a well-rounded course which offers a great deal more than simple vocational training.

Our home economics department, with its courses in urban and farm housing, and our agricultural engineering department with its studies of farm housing add greatly to our research, teaching, and public service in the housing field.

Land Economics, the journal which was started here by the late Professor Ely and is still published at our University is, I am told, one of the outstanding learned journals in the field.

But I believe Wisconsin's greatest contribution in this phase of scholarly inquiry is through the Wisconsin Housing Research Project. Your meeting here is a part of that project. It is a prime example of that phase of research in which universities excel.

To solve immediate problems of wide application, government agencies often are instituted. To perfect commercial applications of basic finding, private agencies spend vast amounts. But in basic research . . . that searching for new truths, testing of new theories, and formulating new hypotheses . . . the University environment is uniquely suited. It is not only the *field* of University research . . . it is its *duty* to lay the framework of basic knowledge upon which fundamental theories can be constructed. As a worker in the natural sciences, I know that the day-to-day problems are not to be solved until a sound system of laws and principles has been established.

Thus, though the day-to-day problems in your field are pressing, I feel that you must not rush to adopt remedies which are not founded on basic understanding and sound principle. I am told that in the housing field there remain many blind spots, untested hypotheses, and assumptions. I know I need not tell you that only laborious, time-consuming and often unrewarding research can lead to a solution of our housing needs, our second most important domestic problem.

But with such a warning, I want to wish you well in your search for the answer to one of today's most vexing problems of our nation and the world.

Richard T. Ely and the Beginnings of Research in Urban Land and Housing Economics

By COLEMAN WOODBURY*

BECAUSE many of you are on your first or maybe second visit to Madison you may not know that a metal tablet on the front of the University's Bascom Hall carries these words:

"'Whatever may be the limitations which trammel inquiry elsewhere we believe the great state University of Wisconsin should encourage that continual and fearless sifting and winnowing by which alone the truth can be found.' (Taken from a Report of the Board of Regents in 1894.)"

During the year and a half or so that I was on this campus I asked quite a few persons, mostly upper-classmen and graduate students, what was the occasion for this statement. Only a minority of them had any idea. One did remark, I recall, that he didn't know but he thought the Regents must be slipping because while he had been in these parts he hadn't heard anything from that august body that seemed to him to be in the same league with the statement on "sifting and winnowing." Most of those I questioned apparently looked upon the tablet as one handed down from on high in some distant era and, through some oversight, never brought down from the top of the local mountain. They were rather proud of it but had never taken the time to look into its origins.

I realize that one possible inference from this is that I attracted the less alert and inquisitive members of a student body of some 18,000. But how many of you students of urban land and housing know that this memorable sentence is from the report of a three-man committee of the University's Board of Regents that heard charges against Dr. Richard T. Ely of dangerous radicalism in the tumultuous early '90's—charges of teaching anarchism, and, believe it or not, at the same time of advocating socialism as well as of favoring strikes and boycotts. A few years ago this may have seemed a little less than fantastic episode from earlier days of violence and bitterness, but today we perhaps should note that the major charge was advocating socialism and only secondarily was it alleged that he had entertained in his home a representative of a striking union in Kansas City. Apparently it has taken another fifty years for "sympathetic association" with people of unpopular opinions to be taken seriously as a *major* offense against the American way of life!

In exonerating Dr. Ely, the Regents' committee made some further comments that are as pertinent today as ever. Let me read one paragraph:

"As regents of the university with over a hundred instructors supported by nearly two millions of people who hold a vast diversity of views regarding the great questions which at present agitate the human mind, we could not for a moment think of recommending the dismissal or even the criticism of a teacher even if some of his opinion should, in some quarters, be regarded as visionary. Such a course would be equivalent to saying that no professor should teach anything which is not accepted by everybody as true. This would cut our curriculum down to very small proportions. We cannot for a moment believe that knowledge has reached its final goal, or that the present condition of society is perfect. We must, therefore, welcome from our teachers such discussions as shall suggest the means and prepare the way by which knowledge may be extended, present evils be removed, and others prevented. We feel that we would be unworthy of the position we hold if we did not believe in progress of all departments of

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knowledge. In all lines of academic investigation it is of the utmost importance that the investigator should be absolutely free to follow the indications of the truth wherever they may lead. Whatever may be the limitations which trammel inquiry elsewhere we believe the great state University of Wisconsin should ever encourage that continual and fearless sifting and winnowing by which alone the truth can be found."

II

Who was this man who in the early part of his career became the center of such a controversy? Born in Ripley, New York in 1854, he spent his boyhood in Fredonia, a "transplanted New England town" as he called it in his autobiography. In 1876 he was graduated from Columbia College where he majored in philosophy. On a scholarship he studied in Europe, mostly in Germany, where he changed his major interest from philosophy to political economy and received the Ph. D. degree, summa cum laude, from the University of Heidelberg in 1879. In the German universities he was influenced greatly by the lectures and writings of members of the German historical school of economists. Returning to this country in 1880, a year of search brought him the position of associate professor of political economy at the then recently established Johns Hopkins University. For eleven years he helped John Hopkins to become the first university, in the real meaning of the word, in the United States. He wrote books on *French and German Socialism*, *Taxation in American States and Cities*, *The Labor Movement in America*, *Problems of Today*, *Social Aspects of Christianity*, and an *Introduction to Political Economy*—all small and, in some respects, elementary books by today's standards but in total a very respectable output marked by a lucid style, a humaneness of approach, sensitiveness to ethical considerations, and a taste for facts rather than the prevailing preoccupation with deductive reasoning from the assumed motivation of the economic man.

During this eleven-year period he could count among his students Woodrow Wilson, with whom he planned to write a history of American economic thought; Albert Shaw, later editor of *The Review of Reviews*; John R. Commons, then in the trying early years of his remarkable career; John H. Finley, later President of Knox College, Commissioner of Education, and President of the University of the State of New York and chief editorial writer of the New York *Times*; Newton D. Baker, Secretary of War in Wilson's cabinet; E. A. Ross, distinguished sociologist of the University of Wisconsin; and others who later achieved distinction in academic life, business and the public service.

Also in this period Dr. Ely became one of the leaders in organizing the American Economic Association in 1885 and for the first seven years was its secretary. (Later, in 1900 and 1901, he was President of the Association.) Always he maintained that the founders of the Association were the young rebels of the time—protesting against the formalism and dogmatism of current economic doctrines, striking out to break, in Walter Bagehot's phrase, the crust that had formed over political economy.

In 1892 Dr. Ely came to Wisconsin as Director of the new School of Economics, Political Science and History. In his autobiography he tells of his 33 years at Wisconsin in the section titled *Reaping the Harvest*. In retrospect, they clearly seemed to him on the whole to be years of accomplishment and satisfaction. He helped establish Wisconsin as a great center of graduate study in social science. He did this not only by his own teaching and writing but even more through an almost uncanny ability for marking out potentially fruitful fields of study, spotting

promising young men, turning them loose in these fields, and counseling and encouraging them as they and their associates worked for the harvest that he felt sure could be reaped. Certainly if he had done no more for the University and for social science in America than to exercise this talent on and in behalf of such men as Professor H. C. Taylor in agricultural economics, Professor John R. Commons in labor and institutional economics, and Professor E. A. Ross in sociology, he would have been one of the true benefactors both of the University and of the social disciplines.

Early in his Wisconsin career he offered a course, *Landed Property and the Rent of Land*, in which he gradually developed the body of facts and ideas that later, expanded and enriched by the contributions of others, including Professor George S. Wehrwein, he called *Land Economics*. He also became deeply interested in the conservation movement in which, of course, President Van Hise of the University was a prominent figure.

For the first twenty years or so the Wisconsin period, Dr. Ely kept the stream of publications flowing: *Monopolies and Trusts*, *Studies in the Evolution of Industrial Society*, *Socialism and Social Reform*, *Property and Contract in Their Relations to the Distribution of Wealth*, and *Outlines of Economics*, one of the most popular introductory texts in economics ever written in this land of textbooks. With the aid of various coauthors it went through six editions—the last in 1937. *Property and Contract*, published in 1914, was in many respects his most substantial work and, I believe, the last except for his autobiography, that appeared with Dr. Ely as sole author. He always felt that it came out at a most inopportune time—just at the beginning of World War I—and, therefore, that it never received quite the recognition that it deserved.

III

In 1920 Dr. Ely established at Wisconsin the Institute for Research in Land Economics. In 1922 it was formally incorporated with the revised title, Institute for Research in Land Economics and Public Utilities, and in 1925 was moved to Evanston, Illinois (and a year or two later to Chicago) where it was affiliated with Northwestern University. In early 1925, before the move to Northwestern, Dr. Ely and his institute associates started *The Journal of Land & Public Utility Economics* (now *Land Economics*) as an outlet for the products of the Institute's members and of others doing scholarly work in these fields. It has been published without a break since Vol. I Number I—first at Wisconsin, then at Northwestern and since 1941 at Wisconsin again. The standards set by its first managing editor, Edward W. Morehouse, did as much or more, I am sure, than any other thing to establish the Institute in the scholarly community. Since the early '30's the *Journal* has been the chief if not the only link, particularly in urban land and housing, from the pioneering days of the Institute to the later work at other universities and in government agencies.

For several years the Institute flourished at Northwestern. In those days it had four major divisions or sections: (1) agricultural land—originally its *forte* but an area that declined at Northwestern for several reasons, including Professor Wehrwein's return to Wisconsin in 1928; (2) urban land—the relative newcomer, of which more later; (3) public utilities—the field that attracted the most attention, money and controversy during those years; and (4) taxation—in which much of the effort went into studies of assessment methods and results, particularly in Cook County.

As the great depression deepened in 1930 and '31 the Institute came upon

evil days. Individual donors, some of them personal friends of Dr. Ely, curtailed or cut off their gifts. Foundation grants expired and were not renewed. In 1931 the Institute was reorganized and its name changed to the Institute for Economic Research. Northwestern underwrote a minimum budget and had to make good almost the entire amount. At the end of the academic year 1931-32, the University's officers decided it could not continue this arrangement. With characteristic courage and optimism, Dr. Ely, then 78 years old, moved the Institute's headquarters to New York, brought some new faces onto the Board of Trustees, and tried to ride out the storm. It was a gallant but futile try. In those days of disillusionment and despair few persons in this country saw far enough into this new area of land economics to appreciate the contribution it could have made to the rehabilitation of the economy. The irony, perhaps even the tragedy, of those days was that even as Dr. Ely was desperately working to keep alive in the erstwhile capital of the country this last product of his long, distinguished career, other men with basically the same objectives but with different backgrounds and vocabularies were putting together in the new capital a series of policies and programs that, whatever their weaknesses and contradictions, did help turn the tide of depression and did infuse new life and hope and faith into large segments of our nation. The TVA, the AAA, the often halting and groping efforts of the government in behalf of housing are examples.

At all events the Institute died in New York. John Burton, now Budget Director of the State of New York, who worked with Dr. Ely in those days tells me that despite the heartaches and failures, he believes the Institute's last work did have appreciable and much-to-be-desired effects on assessment practice in New York City and on the policies of some important mortgage leaders. During this period Dr. Ely did see through the final edition of his *Outlines*. In 1913 Macmillan published his autobiography, *Ground Under Our Feet*, which in my opinion is required reading for land economists of all kinds and persuasions. Two other volumes appeared with him as co-author but they added nothing to his reputation. Late in the '30's, President Butler and Professor Allen Nevins of Columbia, his alma mater, were largely responsible for making Dr. Ely an Honorary Associate in Economics at Columbia University—a position that meant not only recognition but also a modest honorarium to a man whose whole career of almost sixty years had been devoted to advancing economic thought, research and policy in this country. Late in 1943, Dr. Ely, then in his 90th year, died in Old Lyme, Connecticut.

This, then, is a sketch only of the career of the man who deserves to be called the father of urban land economics in the United States. Admittedly this is today an humble title—by no means his most illustrious. But as we look back and around us today at the fast growing body of fact and opinion on urban land problems, at the stature they are reaching in the public mind and in economic and political discussion, at the prospects of radical changes in urban structure and function over the next generation or two, at the bold and fascinating experiments actually underway in this field in Great Britain, and at the rebirth of scholarly interest in this area, under one name or another, at such institutions as Columbia, Harvard, M.I.T., California and North Carolina, when we consider these facts and trends who can say that at the University of Wisconsin's 150th birthday, "father of

urban land economics" may not be one of the most distinguished labels worn by any of her sons? It could be.

IV

As far as I know, the first book under the title *Urban Land Economics* was put out by the Ely Institute in 1922. A mimeographed volume, the introductory section included an outline of the first course in urban land at the University given in the second semester of the academic year 1921-22 by Dr. Ely and Martin G. Glaeser, then an assistant professor. The rest of the volume was made up of lectures given before this class by Professor Michael Rostovtzeff on *Cities of the Ancient World*, by Dr. Mary Shine of the Institute staff on *Urban Land in the Middle Ages*, by Professor R. H. Whitbeck, the geographer, on *Selection of Urban Sites*, by Dr. G. B. L. Arner, who had made a pioneering study of land value appreciation and costs of holding in New York City, on *Land Values*.

When the Institute came to Northwestern in 1925 (my first contact with it, by the way), the work in urban land was looking up. It was, of course, in embryonic form but the Institute had five modest graduate scholarships from The Henry Strong Educational Foundation in Chicago, supplemented by free tuition from the University, and the Dorau and Hinman text was in the works. The Henry Strong scholarships were continued as long as the Institute was at Northwestern. To the Institute they were worth many times their monetary value because they helped to attract young graduate students to a field whose title meant little or nothing in those days to most college teachers and others who were in positions to advise young hopefuls. Even so, the average caliber of these students was not too high in the first three or four years but picked up noticeably thereafter. As evidence of this later improvement, last week I came across in my old files a letter and scholarship application made in the spring of 1932 by one Richard U. Ratcliff of Madison, then in the real estate business with the Paul E. Stark Company. Mr. Ratcliff had been out of the academic fold since graduating from Wisconsin in 1927 but was seeking further background and an opportunity to research in urban land, real estate and housing. He even confessed to a "dormant urge to teach." Unfortunately the scholarships had been discontinued with the pending move of the Institute from Northwestern and the Institute, therefore, can claim no direct part in Professor Ratcliff's subsequent rise in his chosen field.

V

How did the Institute headed by Dr. Ely happen to pay so much attention in the middle and late '20's to urban land? By what route did he go from his earlier concern with conservation of national resources, agricultural and forest land uses, and agricultural land tenure to the complex problems created by the disorderly and often chaotic growth of our cities? There is, of course, no simple answer to these questions. Partly he followed the implications inherent in his concept of land. Partly he saw in the rapid growth of zoning and allied measures during the '20's a clear illustration of his basic idea that property rights are man-made and can be, in fact have to be, modified and redefined in light of human needs in an evolving economy. Also, I believe he never forgot a much earlier disagreement between himself and certain disciples of Henry George and welcomed an opportunity to test by further analysis and additional facts some of the fundamental issues that this dispute helped to define. His stake in Madison as a civic-minded

citizen over quite a period of years as well as an investor and, in the technical and non-derogatory sense of the word, a modest speculator in the development of new areas had brought him face-to-face with some of the raw materials of urban land economics. Certainly the move to Chicago played some part. An immense and lusty metropolitan area, Chicago was then in the throes of a building boom and a fever of subdividing activity that ranged from widespread land butchery to occasional city building. All this stirred his imagination on the almost appalling possibilities for good and evil that these happenings held for families in that area for decades to come. And as he met men engaged in this work, whether it was good, bad or indifferent, he realized how little they actually knew about what they were doing and how poorly equipped students and specialists in our economic society then were to help them.

All these influences seem to me to add up to a fairly adequate explanation for the Institute's decision to press forward its research and teaching in urban land. In preparing for this paper, however, I came upon one set of facts that seem to me significant and that I, at least, had not fully appreciated. In his early career Dr. Ely gave some attention to the ideas and activities commonly lumped together as municipal reform. Not to wander too far into the early days of this movement, I call your attention to *The Needs of the City*—an address delivered before the Boston Conference of the Evangelical Alliance, December 4, 1889, by Dr. Ely—then 35 years old and at the Johns Hopkins University. In the final section, "Enumeration of Things Needed by the City," he lists twelve:

"1. Let me first mention the means of education which should be liberally provided, and which should, for the most part, be gratuitously offered . . .

2. As a second item and one closely connected, I mention play grounds, parade grounds, play-rooms, and gymnasiums . . .

3. The third item is free public baths and public wash houses . . .

4. The fourth item is public gardens and parks and good open-air music.

5. Very important in all large cities is an improvement of artisan's dwellings, and the housing of the poor generally . . .

6. The sixth item is complete municipalization of markets and slaughter houses, rendering food inspection easier and more thorough.

7. The seventh item is organized medical relief, rendering medical attendance and medicines accessible to the poor without sacrifice of self-respect and independence . . .

8. Poor relief ought to be better organized . . .

9. The ninth item is improved sanitary legislation and administration . . .

10. The next item is better regulation of the liquor traffic . . .

11. Municipal savings banks . . . Deposits should be invested in city bonds, and other good securities. The investment in city bonds would tend to give depositors a realizing sense of what they have at stake in municipal government.

12. Ownership and management by the city of natural monopolies of a local character, like electric lights, gas works, street car lines, docks, etc. . . ."

It was quite an order the young professor wrote out.

Clearly he put much more emphasis on the environment of urban families and less on forms and procedures of local government than most of his contemporaries did. Most of them, under the influence of the muck-rakers and others, shifted more and more to attacks on inefficiency, irresponsibility, and corruption in municipal affairs and to remedial devices such as municipal home-rule, election reform and city manager government. Dr. Ely, on the other hand, after a full generation or more primarily in other fields, including *Landed Property and*

the Rent of Land, probably had hidden away somewhere in the back of his mind these early convictions about housing, play-grounds, parks and other environmental and recreational facilities as means of contributing to decent, self-respecting living in cities. We know from Professor Commons' autobiography that some 15 years after the Boston speech Dr. Ely had studied industrial housing as one part of an investigation he had made of a textile town in South Carolina. Later he obtained funds from the mill owner to help finance Commons' work on labor history.

Just before the incident that Professor Commons notes, Dr. Ely had written a little book, *The Coming City* (1902), which was essentially a lecture he had given in several cities. Here again we can see his keen early interest in urban life and affairs. He pleaded for what we would now call a career service in municipal administration and cited the administration of state universities in support of this ideal. Just one paragraph:

"May I speak of a personal experience? At present, I hold a humble office. I am one of the three supervisors of the town of Madison, Dane County, State of Wisconsin, and it seems to me, after having held the office some six months, that a man ought to hold it for several years to acquire the knowledge and experience needed to make a good supervisor. I have been hammering away at economic problems for twenty years at least, but in the discharge of my duties as supervisor I feel oppressed by my ignorance. And I presume what I especially lack is sufficient general engineering knowledge; but I see clearly that the engineer requires economics for such an office as truly as the economist needs engineering knowledge."

Later in the same booklet is a section titled *The Ideal of the City as a Well-Ordered Household*. Let me quote from that too:

"Do you not see that when you speak about the city as a well-ordered household you have a rallying cry which may be sufficient to gather about you, in your efforts to secure reform, the best elements from all classes in the community? We use the expression 'municipal government is business,' and the wage-earner is not deeply moved. In fact, he is skeptical. He says to himself: 'Municipal government is business. Then it must be like the factory where I am employed, and where wages were reduced ten cents a day last week. I don't think I like that kind of business.' . . . The wage-earner of the 19th ward in Chicago may say: 'If I look at municipal government as a business affair, what is the matter with our political boss, Johnny Powers? If we are sick and in need he is always ready to help us. If we or our children become involved in the meshes of the law, and find ourselves in jail, Johnny Powers bails us out. If a member of our family dies he sees that we have flowers and a good funeral, and when great festive occasions like Christmas come around, he does not forget to send us a fat turkey.' I am speaking to you about facts and giving you concrete illustrations. If we look upon municipal government as business in the narrow sense of the term, after all, what is the matter with Johnny Powers and his like?

"But when we utter the words—the *city* must become a *well-ordered household*—we have provided ourselves with a rallying cry which appeals to what is best in all classes. We think about clean streets; we think about a provision of ample school room for all children—something neglected by the low class of politicians in all our cities. We think about improved sanitary conditions, about playgrounds and parks. We think about public baths and other agencies for cleanliness. We have something in our ideal with which to move every father of a family who wants his children to grow up strong and intelligent, and to have a better career in the world than he himself has had. All that is best in our nature is called out by this ideal—the city a well-ordered household. The wage-earner understands it, and is moved by it, and the professional man, however learned he may be, cannot well formulate for himself a higher ideal. It appeals also to the business man, who, knowing the difficulties, perplexities, and evil in the business world, would like to escape from it all in public life."

In the final section of his lecture he stated: ". . . The spreading out of cities

and the extension of urban conditions to country districts may mean, and must be made to mean, a combination of advantages of city and country . . ." In this sentence and elsewhere in this lecture we have suggestions, never well developed nor sharply focused, that remind us of the vision of the garden-city that, at almost the same time, was being slowly and laboriously evolved by Ebenezer Howard in England.

Although Dr. Ely later changed his views on some of the 12 points in his Boston speech and probably would have revised some of his statements in *The Coming City*, it seems entirely possible that his revulsion against the ugliness and squalor of late 19th century cities carried over until, when nearly 70, he started more deliberately to explore and to urge others to probe into the forces and institutions that determine urban structure and its evolution.

VI

Quite probably, many of you are by now saying to yourselves in effect—but what did you folks in the Institute actually do in urban land and housing? It's a fair question but before answering it let me call your attention to two facts.

First, in the '20's the supply of elementary facts about urban land use and methods was shockingly small. It is low enough today as we all know, but remember that the Institute started on its urban land and housing work well before there were real property inventories, before the WPA studies in dozens of cities, before local housing authorities were in existence, before federal officials had compiled many useful data from and as guides to their operations, before trade associations had made much headway with educational material for mortgage lenders or realtors, before the first federal housing census, before most city planning commissions would even admit they had any interest, except for zoning enforcement, with what went on within lot lines, before the Census Bureau and others had applied the techniques of sampling to housing studies, before the word housing, as a matter of fact, had outgrown its earlier connotations of tenement house regulation, an occasional paternalistic attempt at industrial housing, and sporadic deplorings of slum conditions. I don't mean to imply that we had nothing to go on. Diligent search would turn up occasional but largely unrelated studies here and there. In general, however, it was hard, slow going and if the Institute, like Daniel Boone, was never lost, it was, like he was, rather bewildered once for three or four days.

Second, others were laboring in the same vineyard even then. Although we had mighty little material to work with, during the seven years that I had first hand knowledge of the Institute's urban land studies (1925-32), at least three or four other groups were facing up to much the same problems in trying to reach similar or at least related objectives. The *Regional Survey of New York and Its Environs*, financed by the Russell Sage Foundation to the extent of about $1.25 million, undertook, under the direction of Thomas Adams, its monumental analysis of that great area. Some of its ten volumes still are useful sources of facts, analysis, and suggestions for further research. Governor Alfred E. Smith's Commission on Housing and Regional Planning, under the chairmanship of Clarence Stein, broke a rather different path but one that can still be retraced with profit. Its work led Henry Wright, Eugene H. Klaber and a few other architects, to some rather specialized but stimulating analyses of the economics of moderate income housing, particularly in large-scale projects. Finally, toward

the end of these seven years, the University of Michigan began to publish its series of research monographs on the work directed by Professor Ernest M. Fisher, a student and associate of Dr. Ely at Wisconsin and again later at Northwestern. In addition, of course, among the sociologists the urban ecologists were at work—Park, Burgess and Mackenzie.

We also had the benefit of discussion and suggestions from many experienced and thoughtful men in business, public service, the professions, and civic agencies. Many of them knew a lot about cities; some of them had thought long and hard about them. Unfortunately, most of their ideas and beliefs were more or less hunches—drawn from their own experience and tested only in it. Although they were valuable friends and critics, they didn't help much with systematic and representative facts nor with our difficulties in research method that came largely from the newness of the area and the scarcity of data.

Now, what did we do in urban land and housing at the Institute?

During the first two or three years of this period (1925-32) a substantial proportion of its resources for this section of its work went into Dorau and Hinman's *Urban Land Economics*, published in 1928. As a step in the Institute's activities in university and adult education, this *may* have been defensible. But these educational sides of the work are not within the scope of this paper. As an apportionment of meager research resources in a very new field, the preparation of a textbook seems to me a mistake. It can result in too much purely descriptive, rather superficial fact-compiling. It is apt to become a pouring of new wine into old bottles or the patching of an old garment with new cloth that soon tears away from the old fabric. It seems to fix some people's views about basic questions that need much deeper probing. It may give outside researchers a distorted view of the new field and of its possibilities.

After the preoccupation with this job, the Institute's urban land program developed slowly in three divisions: (1) research into some economic aspects of subdividing; (2) studies, more or less disjointed, on economic considerations in city and metropolitan regional planning; and (3) housing. In the Institute's taxation work under Dr. Herbert D. Simpson other studies were made with direct bearings on urban land. Within each of these divisions, of course, much more was projected than could be done by 1932.

In exploring subdividing in the Chicago region and elsewhere, we made some preliminary investigations of oversubdivision in sample areas, a study of deed restrictions as control devices, an analysis of land value increases and decreases in subdivision areas, another on the effect of the Worlds Fair of 1893 on subdividing in Chicago, and still another on methods of financing subdivisions.

In the economics of city and metropolitan planning the original studies were on quantitative needs for various types of land use—starting with retail business uses. Later came a method for estimating the volume of land needed for urban expansion, an analysis of recent court decisions on zoning that dealt with substantial questions of land use, an evaluation of judicial doctrine on the valuation of land in eminent domain proceedings, a short historical review of land policies of American cities, a preliminary study, not only preliminary but probably also premature, on the effects of airports on city structure, including the quality of neighboring areas for residential purposes, and an essay on suggested changes in public control measures in the interests of orderly, sane growth.

In housing, which got underway a little later, we spent considerable, maybe too much, time on an analysis of the trend toward multi-family housing in American cities during the '20's and on a related inquiry into the attitudes of housing consumers toward home ownership and renting. Another study analyzed the production costs of the Sunnyside housing development in New York.

Although these were our major sub-areas of urban land research, my rough guess is that rather more than one-third of our man-power went into more or less independent studies—some of them test-borings—outside of these three sub-areas. Thus we looked a little further into the relations of land values and population increase, the growth and shifts of retail business districts in larger suburban cities, real estate license laws in theory and in practice, operating costs and problems in central office buildings, restrictions on corporate ownership of real estate in several states, one or two phases of mortgage lending practice, the effects of specific public improvements on land values, the relations of skyscraper buildings to traffic congestion, the valuation of vacant land in suburban areas and, near the end, a preliminary study of corporate reorganization of large residential buildings.

I haven't tried to give you a complete inventory of our research studies but enough to show their diversity and the areas of emphasis. It may well be, however, that the work done or brought along to some kind of a stopping point is less significant than what we had projected but never really started. I find in my papers a rough outline for a study of *The Reclamation of Blighted Residential Areas*—written years before urban redevelopment became a topic of polite if often rather dull conversation. We also had hopes for a major study of the financing of city planning in American cities. We had actually made a start on an economic history of the Chicago Plan, which we hoped would bring out some of the facts of life on the inter-relation of the city planning of that day and the interests of various major segments of the community. We also had in prospect an analysis of housing standards and a comparative study of existing standards in different sections of this country, in Great Britain and Scandinavia. (Also in my notes I find a sketchy outline for an essay on urban land as a by-product of the methods of doing business, of the techniques of industry, as well as of the group habits, values, and ways of life that are prevalent in our society.)

Nearly twenty years later these jobs are still among those that have not been adequately done. Most of you, I believe, would agree that they are worth doing even today. Further, probably many of you would agree also that some of the Institute's first, groping studies should have been widened and deepened during these past years. All this means to me *not* that the Institute was manned by people of extraordinary insight and foresight. It wasn't. Rather, the meaning of these facts is that the basic concepts and intellectual tools of the Institute in this area had some validity then and have some today. Someday, someone, somewhere is going to dust them off, polish them up, modify, and apply them. When this is done, I believe it is a safe prediction that he (or they) will come up with a body of fact and theory that not only will add to the understanding of our society and how it works, but that also will guide us toward wise decisions in increasingly important areas of public policy and private undertakings.

VII

Well, my time this evening is running out and my assignment has been largely

'tho inadequately done. I have tried to give you an account of the career of a man long on the staff of this University, an unusual man whose life-work influenced markedly the early research work in the fields in which most of you are now carrying on. It would not be appropriate for me to throw in much more of my own opinion, criticism, or plain second-guessing on that work. Probably too much of them are apparent already to you. But I am certain that Dr. Ely would not wish anyone to close a paper of this kind without some comments or tentative evaluations for consideration by you and others who may influence materially the future of housing and urban communities in our country. So I am going to put forward but not develop a few items of reappraisal on the Institute's few years in urban land and housing studies. These comments are not on the character and quality of the output, which you are in a position to judge for yourselves, but on our conception of our work and on the methods and spirit in which we undertook it.

First of all, it seems to me that the Institute's approach or conception of its job was essentially right. We avoided the fatal mistake of positing a principle or basic concept to explain the economic phenomena we were dealing with and then, when it became apparent that the principle didn't apply to some of the facts, declaring that these facts were outside the bounds of economics—that they were the proper concern of sociologists, or social psychologists, or political scientists, or someone else. We didn't make an inadequate theory the principle by which we defined our field. We started out to understand and, if possible, to explain the collective activities by which men in an organized society use land in cities and some of the relations that grow up among them primarily as a result of that land use. Maybe we reached some little understanding; we certainly never achieved a systematic conceptual or theoretical explanation of these activities and relations or of any large portion of them. But we didn't stop trying; we didn't make our discredited hypotheses the basis of an artificial and futile redefinition of our undertaking.

On the other hand, I do feel that we were guilty of the prevalent confusion and fuzziness about the term "science" and its derivatives. A brochure on the Institute of those days reads: "In a phrase, the aim of the Institute is *scientific economic service*; the method is to *look and see the facts*." Now this is not the time nor I the proper person to start a fruitful discussion of science and scientific method. Neither do I wish to seem a querulous word-chopper but I would suggest two points: (1) There are significant differences among four terms: (a) social science, (b) social invention, (c) social philosophy, and (d) intellectual honesty or respect for facts. They all should be valued highly by thoughtful persons. They are not contradictory but they are *not* the same. (2) There are compelling reasons for all persons in intellectual pursuits, particularly for those in the social disciplines, to be careful about their language in this area. Very few in fact are and we of the Institute did little to clarify these important distinctions.

One of the strengths of the Institute's method was the extra-mural contacts that we had with thoughtful leaders in business, professional and public life, with trade associations, city and regional planning organizations, with experimental projects such as those of the City Housing Corporation in New York of which Dr. Ely was a director, and with temporary civic and public agencies investigating urban problems. We also benefited from discussions with and the criticism of our

colleagues at Northwestern.

The Institute's organizational set-up as a quasi-independent unit affiliated with established universities has obvious merits and, in my opinion, most of these were demonstrated during the Institute's active years. It is not, of course, the only possible arrangement that would have these merits. On one often discussed point: I believe nearly all senior staff members agreed that a light teaching schedule in courses closely related to their major research work was stimulating and helped them keep perspective. Not every staff member taught every semester. There was enough flexibility so that a man who had to be away often for field work or who was head-over-heels in the hard work of pulling together and writing up the results of a long and difficult research job had full freedom to do so.

Maybe it is the change in the times, but now it seems to me that the Institute's most noticeable general weakness in urban land was our caution, perhaps timidity is the word, in respect to government action in this area. As I look over the records of those days I am astonished how much we had of the factual and logical case for direct government aids and action as distinguished from police power regulation. To be sure the facts at our command were much sketchier and often more suspect than those we have now, but many of them pointed unmistakably in the same direction. Yet we followed the path they indicated quite easily to a certain point but never in our research nor in our suggestions on public policy did we come really to grips with this question. We didn't consciously avoid it; neither Dr. Ely nor anyone else that I recall ever diverted us from this line of study and exploration. For me it is one of those things that cannot be adequately explained now. It certainly is a curious side-light, however, on work in one section of an Institute headed by a man who in 1885 helped draft the American Economic Association's "statement of principles" which began: "We regard the state as an agency whose positive assistance is one of the indispensable conditions of human progress . . ."

Finally, we of the Ely Institute worked hopefully in an atmosphere of mutual criticism, self-respect and freedom. It wasn't all sweetness and light by any means. We had our full quota of doctrinal disputes and personal incompatibilities. Quite possibly we would have benefited from a slightly more rigorous organization of our time and effort. But Dr. Ely had a strong conviction of the worth and dignity of the scholar and researcher in a complex society. Very few if any Institute staff members were not influenced by it. He also never forgot the watch-words of the first great educational administrator under whom he worked, President Gilman of the Johns Hopkins University, to whose memory he dedicated his autobiography 57 years after he began his scholarly career at that university. Those watch-words as Dr. Ely repeated them so often were, "Men, not Bricks and Mortar" and in respect to the attitude of administration toward the individual scholar—"Give Him Scope."

Some of you have carried research in urban land and housing economics well beyond the Institute's farthest point north. Others, in the years just ahead, should make further substantial progress. In closing this talk, however, may I suggest that you will think very long and learn very much before you arrive at a sounder and more enduring foundation on which to organize and build the work that Dr. Ely, one of Wisconsin's eminent sons, did so much to lay out and to advance.

Panel I

The Neighborhood Concept in Theory and Application

Chairman: Frederick J. Adams, Head, Department of City and Regional Planning, Massachusetts Institute of Technology.

Panel: Svend Riemer, Associate Professor of Sociology, University of Wisconsin; Reginald Isaacs, Planning Director, Michael Reese Hospital, Chicago; Robert B. Mitchell, Research Professor in Urban Land Use and Housing, Columbia University; Gerald Breese, Secretary, Committee on Housing Research, Social Science Research Council, Washington, D. C.

Chairman, FREDERICK J. ADAMS*

I think perhaps the easiest way to define the neighborhood concept is to quote from a book which has been referred to in a number of articles, a book by James Dahir on *The Neighborhood Unit Plan*, published in 1947 by the Russell Sage Foundation:

"The neighborhood unit plan, in brief, is the effort to create a residential neighborhood to meet the needs of family life in a unit related to the larger whole but possessing a distinct entity characterized by the four strictly local factors: (1) A centrally located elementary school which will be within easy walking distance—no more than one-half mile—from the farthest dwelling. (2) Scattered neighborhood parks and playgrounds to comprize about 10% of the whole area. (3) Local shops to meet the daily needs, grouped together at accessible points on the periphery of the neighborhood. (4) A residential environment—that community-created resultant, the product in part of an harmonious architecture, careful planting, centrally located community buildings, and special internal street system with deflection of all through traffic preferably on thoroughfares which bound and clearly set off the neighborhood."

Whether or not we agree with the application of this concept to community planning, the purpose is better living, particularly in the residential areas where the family carries on its activity while the man of of the house is in some very undesirable industrial or office building neighborhood carrying on the daily task of earning a living. Certainly the emphasis is on what can be done in our larger cities to bring into them something of the values which we find in the smaller communities. I think the stimulus for the idea is largely the inadequacy of the industrial community, as it has developed since the 19th Century, to satisfy the needs of normal family life.

Professor Richard T. Ely of Wisconsin fame once wrote that the city with all its material advantages is being designed for adults and not for children. He said that housing, traffic congestion, noise and dangers of the street have added to the cost and inconvenience of raising children. He said there is no reason why a city could not be so planned and the houses, streets and other features so adjusted as to make the urban home in the city as good if not better than the farm as an environment in which to rear children. Certainly that general point of view influenced the thinking of men like Clarence Perry and Ebenezer Howard; it influenced the Garden City movement, and others who felt that advantages of urbanization could be combined with the qualities of our rural communities and small towns which made them attractive.

I am speaking now not of what has happened to our neighborhood unit in

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application but what was behind the original thought in developing a method which could be applied to the re-planning of existing cities and particularly to the development of new communities. The effect that this theory has had on planning policy is more difficult to pin down.

This neighborhood concept has redirected attention to the importance of the more immediate environment of the home. The tendency in the earlier days of city planning in this century was to develop street systems and the specific center of the various elements of municipal physical development in terms of a large area. There has been some value in the consideration of the neighborhood unit even though we may disagree in defining what a neighborhood is or how big it should be; we have realized that we should start with the house and work outward through the immediate neighborhood and toward the community of which it is a part while at the same time we adopt the more comprehensive approach of working from the region down to the city, down to the neighborhood. We must find the relation of one house to another and the relation of the children in one house to those of its neighbors. I remember the emphasis placed by certain planners in New Jersey twenty years ago in thinking of the immediate environment in planning the building and of relating it to the lot, and the lot to the community in which it was located so that house and lot became a part of the neighborhood unit. Working from both directions we have gained to some extent in that type of thinking.

As far as what is being done, we can think of only a few examples besides the ones I have mentioned. The Green Belt towns and other free, planned communities certainly make an effort to meet the requirements of the neighborhood unit concept. When we come to its application in large cities we recognize that here is where our limitations appear. There can be a misuse of this theory in encouraging certain types of development which are undesirable, both social and physical.

That is true of any concept and it is certainly true of zoning. We can use zoning to do some things which, from a social viewpoint, are definitely harmful. That does not mean that zoning is bad but that it is to be used carefully and democratically.

Another limiting factor has been the tremendous increase in the use of the automobile since the neighborhood unit concept was started. There will be some discussion later of the fact that the increasing use of the automobile, increasing range, and increasing availability of places, make the walk-to-work theory less significant than it was twenty or thirty years ago.

There are certain ways of living, such as small children going to school, and women doing the daily shopping, which are not affected but, with respect to certain economic activities, and other activities carried on as a family unit, the automobile has made a definite change in the emphasis which is placed in this country on distance and time as against the effect in Europe where the automobile is not as common in all income classes of society.

One of the first objectives of research into the neighborhood subject is to find out to what extent this neighborhood unit theory does meet the demands of the people themselves.

I think we sociologists and planners and architects and others have developed ideas and hypotheses on the basis of observation but we need more intensive studies. Both from the standpoint of the sociologist and the psychologist we must discover what the nearness of things means to the average person, the effect on the neighborliness of the people, the

friendship patterns, and the informality with which the family life can be carried on in a community where people know one another, as against the more diversified community where the ties of social contact are at long range.

Many of us have seen a recent book entitled *Housing America*. I have no intention of criticizing the Cleveland company that produced this volume, but I do have some comments on the principles of planning which are set forth. The book presents a proposed plan for a town containing some 15,000 houses with a population of fifty to sixty thousand people. In the proposed plan, all of the streets are of equal width; schools are contained in the same blocks with residences; garages are in the back to cover up the unsightliness of bad planning; the high school is widely separated from any elementary school; and the gridiron pattern is apparently accepted as being indefinitely extensible in all directions as the city grows. It is not a matter of criticizing this particular volume, which was designed to sell the idea of central heating for communities, when we point out the limitations of the concept of city living which the proposed plan implies. Certainly it is far removed from the present widely-accepted objectives of city planning involving an effort to bring to the citizens the values of informality, friendliness and citizen participation. These values can be fostered only if there exists in the physical arrangement of things some nucleus where people are somehow brought together, be it in a barber shop or doctor's office. Certainly the unorganized urban sprawl which extends on outward to the horizon produces no personal feeling of being a part either of a social or a physical community.

By SVEND RIEMER*

THE sociologist's interest in the neighborhood is older, probably, than that of any other expert concerned today with problems of neighborhood planning. The emphasis of his interest, to be sure, is on the social rather than the spatial dimension; he is intent upon the investigation of "neighboring" rather than the determination of the ideal neighborhood unit plan.

The sociologist's interest in the neighborhood has always been related to his interest in means of social control. In studying the changes of social control in the course of the industrialization period the sociologist gains a foreshortened view of developments by making use of the terms primary and secondary group organization. The observation of change is projected, by the sociologist, upon a continuum between the early type of social organization in which the members of the community were all intimately known to each other and the modern urban way of life, based upon an entirely different principle of social organization, in which most individuals deal with each other in their occupational roles only, where crowds intermingle in social contacts of a most superficial nature, where personal contacts are segmentalized and where the institutional organizations of the community are based upon interest solidarity between individuals that are anonymous to each other.

In Clarence Perry's classical formulation of the neighborhood unit plan we find, interestingly enough, references to Cooley's pre-occupation with the primary group: they appear, in this context, as a justification for the revival of a form of social organization which held undesirable symptoms of disorganization at a minimum.

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The discrimination between social conditions where groups work in close and intimate contacts with each other, and different conditions where individuals are held together by contract only, proved to be of such fundamental importance to the sociologist that the literature is abundant with terminology aimed at the discrimination of these two forms of social organization. The reader may be familiar with the above distinction in terms of any of the following dichotomies: folk-society versus state-society, folk-society versus urban society, sacred versus secular, Gemeinschaft versus Gesellschaft, or rural versus urban.

Throughout the discussion of these differences there has been an unmistakable slant in favor of the "folk," the "sacred," the "Gemeinschaft" and the "rural" type of social organization and a severely critical attitude toward the anonymous and exploitative contacts of our highly urbanized civilization. American sociology, let us not forget, has made its major contribution to the practical problem of enforcing conformity among the masses of immigrants attracted by our urban industries. Maladjustments in the unstable and heterogeneous urban neighborhoods have always contrasted unfavorably with the stability and homogeneity and a predominantly law-abiding attitude in the smaller communities of earlier American settlers. Biographical research into the background of American sociologists furthermore invites the suggestion that they were predominantly small-town people themselves, and thus in favor of a way of life opposed to metropolitan conditions.

The emphasis on problems of individual and family adjustment may explain why American sociology, until very recently, is almost entirely lacking in attempts to deal with the structure of our society as a whole. Whenever the need was felt to give a comprehensive picture of social inter-relationships, sociologists have availed themselves of a microcosmic approach: they explored the complex fabric of individual communities, not that of either state, region or the nation. They studied Middletown, and Plainville, U.S.A., they analyzed Yankee-City and Southern Town. Even today, the wider aspects of federal government, of nation-wide economic and voluntary associations, of class lines and more specific interest groups remain largely white spots on our map of social investigation.

Intensive work, on the other hand, has been done in the penetration of specific urban environments. We know a great deal about the crime community, about the single-man's district and the habitat of various ethnic groups in our large cities. In this research, of course, we have been "looking for trouble"—in order to find means of overcoming it. But what originally was a justified focus of interest upon the sources of social disorganization has gradually crystallized into the cliché of dogmatic assertions about the evil of city life as compared to the peaceful bliss and the well organized conformity of small-town living and even rural isolation.

The informal methods of social control in the small and close-knit community have been advertised as weapons against social disintegration as experienced in the big city slums. The constraints imposed upon the individual by gossip and rumor and subtle means of ostracism, the lack of privacy on the rural party-line and the close check on all members participating in the voluntary organizations and the churches of the small town are well known to the sociologist. These facts may well be used in attempts to re-vitalize such primary-group contacts within the chaos of disorganized urban living.

Such attempts on the part of the

sociologist, by the way, are by no means limited to plans for the design of residential construction and the provision of neighborhood facilities. The so-called Area-Project in Chicago tries to cope with the difficult task of mobilizing—by means of education—group consciousness in one of the remaining ethnic groups for the combat of social disorganization.

To eliminate some of the bias that has slipped into the glorification of the neighborhood unit as a means for urban rehabilitation, the sociologist has to remind himself of two conditions which make his efforts in favor of neighborhood planning seem either archaic or forgetful of some fundamental values of urban civilization.

(1) The interest in neighborhood planning coincides with a phase of urban development in which the neighborhood as a social unit progressively loses its function. Since the flow of immigration has been reduced to a minimum, the mainstay of neighborhood living in the big city, the ethnic group, finds itself in a state of dissolution.

There are reasons to welcome this change. American citizenship is not confused any more by intermediary loyalties to small in-groups. Movements away from the neighborhood, as a matter of fact, must be looked upon as signs of final adjustment to the American way of life.

(2) Nor can the sociologist overlook the fact that the very aspects of urban life which are to be overcome by neighborhood planning—such as specialization of work and leisure and social contacts—are the very source of not only our but every great civilization. Cultural stagnation may well be expected where the individual is challenged to escape from participation in city-wide and nation-wide problems into the parochial haven of neighborhood affairs. Constructive citizenship and personality development can be impeded—as well as perhaps furthered—by the re-institution of neighborhood living as a predominant pattern.

In considering the social objectives of neighborhood planning we are challenged, then, to keep our minds open and to prevent ourselves from being frozen to more or less dogmatic opinions about the desirability or undesirability of the neighborhood unit plan. This is not to infer that sociologists have remained immune to the fashionable surge in the direction of close-knit community living. The emphasis among sociologists has, perhaps, been pointed somewhat more in the direction of small-town living than the small urban neighborhood. They have discovered, in recent years, the small community—the American community—looking ahead as well as from whence it came. Within the large flood of publications that have come from the press, the tacit assumption is generally made without further proof that small-town living is better than big city life because it holds symptoms of disorganization, such as divorce and delinquency, at a minimum.

The task remains, undoubtedly, of offering proof where, so far, tacit assumptions hold sway. Actual social research in this field has been at an almost complete stand-still, in contrast with descriptive eulogies of the small community. There are some hidden-away academic theses which deal with the phenomenon and the consequences of "neighboring." While little technically useful information for neighborhood and city planning can can be gleaned from these investigations, they have the merit of focusing our attention upon the social aspects of the urban neighborhood which have to be moved into the center of attention if we are to assess the advantages of neighboring planning. It is in the lives of the occupants that desirable or undesirable effects

of neighborhood planning should express themselves.

Research of this nature might get us closer to an understanding of the actual social contacts in our large cities. In this understanding we have remained surprisingly short-sighted. We do not know, as we should like to know, how different social contacts of the city family are distributed over the entire orbit of the urban panorama. We do not know what territorial units have to be considered for the distribution of different types of urban facilities. These different units do not necessarily coincide. The shopping-neighborhood does not necessarily coincide with the range of local movie theatres. The traffic thoroughfare along the commercial streets may have to be considered a point of concentration for social contacts of one nature, while they may have to be considered borderlines separating social contacts of another kind. They may have either an integrating or a dissociating influence in the actual scene.

But we know scarcely anything about the spatial aspects of urban institutional and personal interaction. If we did know more, we should probably learn to consider the large city as a much more complex fabric of interlacing social relationships. Today we are only too ready to put the stamp of stereotyped neighborhood units upon our urban communities. We should be careful, it seems to me, in tampering with spatial arrangements the social implications of which we have not even begun to explore systematically and with the intent to provide the city planner with that reliable technical information which is carried to him by other sciences.

Our problem is not even formulated correctly, if we have to ask ourselves whether neighborhood living is desirable or undesirable, and if we feel compelled to ponder the correct size of the neighborhood unit before we have even investigated whether there is any such thing as an urban neighborhood, and if it is of any sociological significance. We are apt to start with a foregone conclusion. The neighborhood is, perhaps, not that elementary and standardized social unit we like to believe it is. The residential sections of our large cities, for sure, are not at all easily divided into neighborhoods. To the unbiased investigator, as a matter of fact, the neighborhood unit may appear as a pre-conceived pattern rather than the reflection of empirical observation. The neighborhood unit, in short, has yet to prove itself as an advantageous solution to our urban social problems. Whether it is an object worth striving for is hard to find out, however, so long as we are unable to even picture in our minds the very existence of an urban environment that is not structured according to neighborhood divisions, i.e., borderlines where the radiating influences from a plurality of community facilities come to an end.

No doubt, there is a place for neighborhood design. A more realistic appreciation, however, of different patterns of "neighboring" in the city environment would help to free us from the neighborhood concept as a stereotype and a dogma. Let us be realistic. The neighborhood concept fits excellently in the clarification of the practical problem arising where a project of large-scale residential construction on assembled land calls for suitable design. It will fail to answer, on the other hand, many of those problems which arise in the process of comprehensive urban rehabilitation in the city center where a pre-established way of life has to be accommodated, a way of life that is not necessarily congenial to the neighborhood unit plan.

By REGINALD R. ISAACS*†

". . . Research is not an end in itself, but is justified to the degree that it contributes to sound . . . policy; and policies are useful in proportion to the degree that they result in action. But action depends on widespread public knowledge. In choosing subjects for investigation, the Fund (The Twentieth Century Fund) has sought out, rather than avoided, controversial issues, in the belief that controversy is an index of the public importance of a subject and of the need for its impartial treatment."[1]

IN determining the "frontiers of housing research" many issues in housing and planning programs are frequently ignored on the tactical plea that they are controversial. There is no hesitation by redevelopers, housers, real estate groups and plan commissions to use the thirty-year-old neighborhood unit concept as a basis for planning for people. Yet even with wide and general acceptance of such a formula, the assumptions on which it is based should be re-examined.

Three of the basic questions which such examination might well include are: (1) Is it sociologically possible to create neighborhoods in the complex urban structure? (2) Is the neighborhood unit adequate as a physical concept for planning? (3) Should the concept be challenged on the basis that it lends itself to the purposes of discrimination since its most widespread application has been its methodical use for segregation?

The Neighborhood Unit Concept

The concept of the neighborhood as the basic unit in city planning gained wide acceptance following the formulation in 1926 by Clarence A. Perry for the New York Regional Plan Association. Perry defined the neighborhood unit as an area of a community usually bounded by main traffic roads with the elementary school as the focus of activities and containing all necessary recreational and shopping facilities. Roughly with a quarter-mile square in area to accommodate Perry's maximum of a half-mile walk to the elementary school from the farthest dwelling, the neighborhood would contain 5,000 to 10,000 persons. When related to the character of site and the prospective residents, it purported to give both form and stimulus to the common life of the area.

The Neighborhood Unit as a Sociological Concept

Many planners are convinced that it is possible to import the physical and social amenities of the rural and small town into the city through use of the neighborhood unit in which, they believe, "people can find friendliness, relaxation, convenience, and safety, as well as opportunity for self-expression and citizenship on a manageable scale."[2] The neighborhood proponents make much of the psychological and social advantages of creating a sense of belonging and of the use of neighborhood planning to eliminate the causes of social disorganization. They offer the neighborhood as a cure for the reputed "loneliness" of the city dweller and his induced nostalgic longing for a home away from the city. Yet the "flight from the farm" was motivated by more than the loss of rural economic opportunity. New contacts, anonymity and personal freedom were other attractions.

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† For other discussions of this subject see articles by Mr. Isaacs in the *Journal of the American Institute of Planners* (Spring 1948), pp. 15-23; and in the *Journal of Housing*, Parts I and II, in (July 1948), pp. 177-180, and (August, 1948), pp. 215-218. He acknowledges the counsel of Professors Harry J. Walker of Howard University and Martin D. Meyerson of the University of Chicago.

[1] The Twentieth Century Fund, "Background and Aims," *Annual Report, 1947* (New York: 1948).

[2] James Dahir, *The Neighborhood Unit Plan* (New York: Russell Sage Foundation, 1947), p. 5.

In earlier days neighborhoods were the fundamental areas of association for rural people, who constituted the great bulk of the population. Before good transportation, communication, industrial development and the growth of large cities, neighborhoods were usually economically self-sufficient and neighboring did take place. The families in the neighborhoods possessed so many traits in common that they constituted a cumulative social group of a high order of cohesion. Frequently, the families of a neighborhood were all related to one another. Nearly always they had known each other a lifetime. Differentiation along economic, religious, racial, occupational and educational lines was slight. Ordinarily there was one school and town hall government. The mores attained a high degree of homogeneity.

But is it possible for this kind of neighborhood to persist in the city of today? From observation, it is readily seen that people become members of groups larger than neighborhoods and merely reside in residential areas in contrast to living in rural or village neighborhoods as was true in the past.

The planner's concept of the neighborhood, as distinct from that of the sociologist,[3] has been described by one planner as follows:

"The purpose of neighborhood planning is to create an urban environment in which people will want to live, to recapture for American cities a quality of life that many small towns have kept but most large ones have lost . . . There is an unfortunate tendency to call any new residential development a neighborhood unit, regardless of its size or composition. It is true that a group of as few as 50 or 100 families may enjoy a high degree of neighborliness, particularly if drawn together by relative isolation from other contacts. It would be rare, however, that a group of less than 500 dwelling units built within a major urban area would be large enough to maintain itself against outside pressures. The school is a good rallying point for the building and maintaining of neighborhood unity. A neighborhood too small to support such a rallying point is apt to prove too small to maintain its integrity in the surrounding city structures."[4]

The Neighborhood Unit as a Physical Concept

Some planners recommend entirely homogeneous "neighborhoods," homogeneous as to both housing types and people. Other planners and housers want mixed housing types but similar kinds of people. Still other planners want both heterogeneous housing facilities and people.

These easy formulae emphasize the immediacy of facilities to residences and attempt to force naturally overlapping service areas into a mold tightly lacing the resident to a rigid and precious pattern of the planner's making. There is a lack of coincidence in service distances and areas of necessary community facilities that has not been reconciled. There are nearly insoluble problems of planning with the same facile formulae for the ex-

[3] For example, T. Lynn Smith states: "Literally, the neighborhood would seem to mean the area within which *neighboring*, i.e., mutual aid, is extended or takes place among families. Small localities, in which country people live and know each other by their first names are neighborhoods . . . The families tributary to a local institution such as an open-country church, a crossroads store, a one-room school, or an organization such as grange, club, etc., constitute genuine neighborhoods. Thus, for example, 30 or 40 families in an area of about five square miles may maintain a public school; and about this institution enough other activities may be polarized to make it a real neighborhood . . . Unlike the situation in urban communities, the actual portion of rural society with which a given individual or family comes into contact exhibits little heterogeneity. The rural person's contacts are mainly with other farmers, who in turn are the sons of farmers. His associates generally are also members of his own religious group, neighbors of much the same economic and educational attainments, persons whose mores, traditional beliefs, language, and general behavior patterns are very similar to his own. The countryman's contacts are mostly with those who live in close proximity to him. It matters little that elsewhere in the nation there are other farmers with radically different cultural traits. For practical purposes the important thing is that each segment of rural society is highly homogeneous or very slightly differentiated." *The Sociology of Rural Life* (New York: Harper and Brothers, 1940.)

[4] Tracy B. Augur, "Objectives of Neighborhood Planning," *The Architectural Forum*, April 1944, pp. 79, 80, 184.

treme heavy density areas, the extreme light density areas, as well as for the average density areas. Sociologist Louis Wirth states:

". . . It has been found that the settlement of human beings, the patterning of social institutions, the incidence of social problems, and the intricate network of social interrelationships does not, except by accident, conform to arbitrarily delimited areas and that hence administrative areas only rarely coincide with the ecological or natural areas. In the study of urban life, for instance, the types of land use and the types of residential areas to be found in the city do not conform to the neat lines of precincts, wards, and other political and administrative boundaries. Neither do crime, disease, family disorganization, and, for that matter, political alignments fit themselves into the static patterns of formally adopted areal units. They have patterns of their own, and they shift in accordance with the total conditions of life."[5]

A question is raised regarding location of schools. The formula is not readily applicable to areas of light density and is often ill-considered when traffic, topographic, industrial or other barriers interrupt the approved quarter-mile walk for children. What is to take place under this dogmatic formula in residual areas with too few children to efficiently use a school? What is to take place in areas with a 40% Catholic and 60% Protestant and other population? It has been reported that there has been a greater proportion of Lutheran than Catholic schools built since the war. Will there be both parochial and elementary schools provided with insufficient numbers of children within walking distances? Which school is to be the focus of neighborhood activities? Which school is to have the neighborhood playground? Ruth Glass writes:

"Self-contained neighborhoods do not exist. The boundaries of neighborhood life vary for different activities. Secondly, there are also varied neighborhood boundaries for members of different age-groups. School areas, for instance, differ considerably from those of adult clubs, even where the school and the adult club are next to each other. Consequently, the school would not appear to be the natural focal point of a neighborhood."[6]

How can the church be planned in a tightly demarcated area since it is even less a common denominator that the school? Should not all faiths have equally convenient access for adults to church and for children to Sunday School? Isn't the average neighborhood too small to support several or even a few congregations?

A few planners have recognized that the shopping centers sometimes provide initial as well as continuing opportunities for the establishment of neighboring. Fewer planners have recognized the problems inherent in location, size, service areas, population density, purchasing power and competitive market requirements in the urban residential areas other than those encountered on their drafting board. One of these few planners writes, in description of his efforts to use the neighborhood unit concept as a base for planning: " . . . the thought here seems to be that the elements are so overlapping and heterogeneous that neighborhood lines just can't be drawn except in a few cases."[7]

The Neighborhood Unit as a Social Concept

Even were the neighborhood theory a valid one in its physical and sociological aspects, it would be necessary to challenge it on another level—on the basis of its use as an instrument for segregation of ethnic and economic groups. Many city planners have also, deliberately in many

[5] Louis Wirth, "Human Ecology," *American Journal of Sociology*, May 1945, p. 485.

[6] Ruth Glass, "Social Aspects of Town Planning," *Architecural Review*, London, England, March 1945, pp. 67-72.

[7] Thomas E. McCormick, now Executive Director, City Planning Board, Boston, in a letter to the author, May 24, 1943.

cases, adapted the neighborhood for purposes far beyond the purposes embodied in the concept. Too often to be merely happenstance, the physical barriers and prescribed limits of service areas form gerrymandered boundaries as bases for the planned segregation of people by religious, racial or economic groupings. The neighborhood is an excellent device and framework for the organization and enforcement of covenants and deed restrictions and, today, the fear of minority group infilteration is substituted for a common denominator of neighborhood consciousness.

Has there been a definite and unconscionable effort toward the achievement of segregation? Over a period of years a pattern of action appears to have been developed by major proponents of segregation. Their methodology consists of the creation of *nostalgia* for the countryside, emphasis on *planned neighborhoods* as a panacea for satisfying that induced sentiment, the illusory promise of *community facilities* made easily accessible to toddler and adult alike; the stimulation of *neighboring;* the possibilities of *autonomous self-direction* and training for leadership of the city as a whole; and *associations* for preservation of the neighborhood against the onslaught of depreciating forces through use of isolating covenants. For example, a plan commission promises that "all of the longing of the city dweller for a 'house in the country' can be realized in Chicago."[8] But how many urbanites want a "house in the country?" Over thirty years ago, a courageous planner questioned seriously the feasibility of establishing these rural characteristics in the city:

> ". . . the little garden, the croquet lawn, the grape arbor, and the happy privacy investing it all, form a charming picture of what does not exist in the city backyard. So primitive and wholesome a thing as the impulse to garden, which all men feel for a little time in the spring, no matter what their occupation or where they live, finds only abortive expression in the average backyard. City soil and city atmosphere are against it. Moreover, the Chicago man is not a gardener by instinct or tradition. His impulses are not pastoral, they are urban. The result is inevitable—the average garden on the average back lot is not successful."[9]

Neighborhood associations are part and parcel of the smoke-screen around the real objectives of many neighborhood proponents. A prominent real-estater advises:

> "All cities should, of course, through action of the planning commission be divided into neighborhoods for purposes of thorough study and to establish physical boundaries within which the local associations would act."[10]

Because of such recommendations, it is of significant interest to compare the boundaries (natural or unnatural) of ethnic groupings with those of the neighborhoods and communities proposed by planners for almost any city.

Even if it were a fact that perhaps a larger portion of these lines were the result of "natural" barriers, it is recognized that some of the boundaries are consciously emphasized to perpetuate the purposes of segregation.[11] Reinforcing this contention are the patterns of known covenants surrounding these areas, of gerrymandered school districts, of bombings and violence, and of areas of inadequate municipal housekeeping. Even were all neighborhoods of concentrated ethnic groups, it should be a task of the

[8] Chicago Plan Commission, 1948, *Building New Neighborhoods*, p. 6.

[9] The City Club of Chicago, *City Residential Land Development* (University of Chicago Press), December 1916.

[10] From a confidential federal agency report on the conservation of neighborhoods, 1944.

[11] The conscious effort of some cities to use such boundaries as first priority criteria for the insulation of neighborhoods by the aborting of highway, recreation and other plans should not be confused with the necessary demarcation of ethnic groups for purposes of planning research.

planner to break down the barriers and facilitate democratic integration.

The school has been regarded as the equalizing focus of activities for all people—white, Negro, Jew, Catholic, Lutheran and other Protestant, rich and poor, children and adults alike. Yet an avid proponent of the neighborhood states:

". . . Perhaps an even more important difficulty is the fact that heterogeneous city neighborhoods result in highly mixed racial, national, social and income groups served by the same schools. It is the rare big city school that does not have many such groupings, a fact which usually results in an unhappy situation for the children and is highly disturbing to their parents. Schools are, therefore, the most important reason for the flight from the city. . . "[12]

He advises:

"In my own opinion a large, perhaps the major, part of the direction of local schools should be in local hands. In other words, the hiring of teaching personnel, the establishment of educational policies, and so on, in the neighborhood schools should be subject to the approval of the neighborhood improvement association and the local parent and teachers' association. In this way, the mediocrity of many big city schools could be alleviated in those better neighborhoods where the people were really interested in the problem."[13]

Neighboring

Actually, many residential areas find their only bond is the fear of Negro infiltration; such fear is frequently injected into the consciousness of the community by the community organizer whose motives are directed to questionable preservative measures of fictitious real estate values. For example, one mid-western community organizer boasts that he brought five of his neighborhood councils into being by using as motivation the fear of Negro infiltration. He claims that nothing else would have brought them together to learn how to work together, to create a sense of "neighborliness" and solidarity, to feel effective. Establishment of "separate and equal" residential facilities discharges, in their minds, responsibility toward neighbors of another race or religion.

Yet Richard Dewey has pointed out that the major reason for purchase of a "house in the country" was expediency; those seeking "neighborliness" were about equal in number to those who sought a restricted area.[14]

Neighborhood Associations

To the romantic neighborhood concept, already burdened with the physical health of the city, and the physiological and psychological reformation of the citizen, is affixed the responsibility for the survival and advancement of democracy. Implied also is the belief that the acceptance and promulgation of the concept will prevent chaos without the onus of being criticized for centralized planning. Yet government agency and private enterprise alike have provided cause for criticism. The prominent real estater advocates:

"There is no such thing as a neighborhood which does not need an improvement association. Such organizations, in addition to their effect on the neighborhood would have great value as educators in citizenship and democracy, and would give people a proper vehicle for approaching the city government on matters relating to their home territory."[15]

Covenants *are* the end product of these associations. Such groups have lost no time in marshalling their tactics to circumvent the Supreme Court decision outlawing judicial sanction of restrictive covenants. Their efforts include the

[12] Federal Agency Report, *op. cit.*

[13] Federal Agency Report, *op. cit.*

[14] Richard Dewey, "Peripheral Expansion in Milwaukee County," *American Journal of Sociology*, September 1948, pp. 118-125.

[15] Federal Agency Report, *op. cit.*

fostering and spreading of rumors, falsehoods and racist propaganda. Gentlemen's agreements and clubs are abetted and property-buying associations are becoming common devices. It has already been found, given at least the tacit support of a few aldermen and indecision on the part of other city officials, that it does not take too much effort to foster mass hysteria to end in violence against person and property.

A Frontier of Research

Although aware of undemocratic neighborhood planning and building, some housing planners have argued that the concept was not created for purposes of class discrimination, but that it had just been misused to that end. A questioning attitude on the part of social scientists must be part of the attack on the unknown areas beyond the "frontiers of research." It must be questioned whether there shall be a continued attempt to mold the urban family into an arbitrary and fixed pattern for its way of life and to strait-jacket our metropolitan areas to a rigid cellular concept. It must also be questioned whether there is sufficient evidence of the sociological, physical and social failure of the neighborhood concept. Should the planning of residential areas begin with fundamental thinking and not the embellishment of outmoded concepts?

Repudiating the neighborhood unit concept for its structural inadequacies, sociological impossibilities, and the fact that it lends itself as an instrument for implementing segregation, the question is raised as to what basis for the planning of residential areas is acceptable. However, the problem is not susceptible of facile solution and only a small portion of it can be answered immediately. And it is doubtful that a *fixed* answer can ever be determined, in view of our constantly changing ways of life. At this stage it would be presumptuous to present individual solutions until steps toward the goals of residential area safety, convenience and amenity are achieved by close collaboration among sociologists, social and political scientists, physical planners and architects, anthropologists, psychologists, economists—and the people whose lives are to be planned. Svend Riemer has decried the narrow approach taken even by social scientists to this aspect of planning, saying:

". . . Whenever the need was felt to give a comprehensive picture of social inter-relationships, sociologists have availed themselves of a microcosmic approach; they explored the complex fabric of individual communities, not that of either state, region or the nation . . . Even today the wider aspects of . . . voluntary associations, of class lines and more specific interest groups remain largely white spots on our map of social investigation."[16]

Criticism of the limitations of the neighborhood concept cannot be an end in itself, but only a point of departure. It serves its purpose well if it presents evidence and evaluation and if it evokes thoughtful and intelligent response. It succeeds in its purposes if discussion results in questioning attitudes and collaboration toward solution. It fails, and democracy fails, if this frontier of research is ignored.

[16] This *Journal*, pp. 69–72.

By ROBERT B. MITCHELL*

WE have among us people who are interested in planning, in housing administration and in research in the social sciences. We are faced with a challenge that has been made by a sociologist and by a planner. We might

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go away from here having destructively criticized a concept without having substituted anything in its place.

We should try to see whether there is something the planner can use as an idea that may have some vague resemblance to reality as we find it in the city. If so, we who are concerned now with housing research and the structure of cities may help in finding a more sure way. I do not mean by that more sure way that we are going to find any neat package of ideas that is applicable generally. We humans love organization, and we love to have things prefabricated into neat packages. We feel comfortable with formulae and doctrines which allow getting on with the job without too much thought. Many of us have tried to apply the neighborhood concept in planning as a whole and probably too universally without breaking it down into its component parts.

A couple of weeks ago when discussing this program in my office a very brilliant young architect from a European country was shocked to find us raising questions about the neighborhood concept. He said: "All of us in Europe have applied and accepted it. It is just the way of doing things."

In planning we need to keep in mind a few principles that are sometimes overlooked. First, in planning we should strive as much as possible to provide an environment which all kinds of people may want, recognizing the differences among people. There are plenty who have the dream of the little rose-covered cottage in the suburbs with the children running out of the front door; but I have a friend who says his ideal site for a country home is Bryant Park in New York.

That leads into a second point, that the housing needs, including the neighborhood needs of people and their families, change as the years pass. They change because the people grow older, with different experiences and requirements, and they change because of general advances in ideals and in services expected from government. In like manner, our own cities change in population density, in land use pattern, and in many other ways, very rapidly, some more rapidly than others because they may have more constructive vitality.

In view of all this change: in view of the movement of people and of families, in view of the movement in social space as the sociologist likes to term it, as well as in physical space, individuals in families forming contacts of various kinds, families themselves moving as they change their contacts and their ways of living from one neighborhood or one area to another, and the secondary changes in a physical condition, and in requirements for various facilities, there are other arguments which have not been advanced by the speakers before me in support of their assertions.

We have to provide flexible plans so that the city is flexible for this flow of function and of people—this changing life.

Another point is that there are differences among families and individuals in the importance to them of the close-at-home contacts which we call neighboring. These differences occur as between young children and older children and adults. We know very well, for instance, that young children who play with others in the immediate vicinity of home often have feuds with the children at the other end of the block. Their social system is limited to a very small circle. We know that the children, as they grow older, find friends farther from home and they venture a little farther away as they get into high school, and finally as adults their life is over the city. I suspect, also, it varies as people range up and down the social scale.

We believe that probably those who have the most vital dependence upon the immediate vicinity are those who live in the deep slums. In many instances they are those who depend upon their nearer neighbors for food when it is not in the pantry. I think probably the amount of close contact people have with those who live nearby varies inversely with the degree of sophistication a person may have.

When we see this range in the needs of people, how can we plan by a formula which would tend, if carried to its logical conclusion, to create over an entire urban area little units of neat middle-class suburbs? It does not work. Let us forget the large proportion of persons in urban areas, not all living in one part of town, who are individuals and who are not members of family groups.

In residential planning we may have spent too much time trying to create patterns of neat physical entities. We architects tend to like to see things as a neat pattern on paper and we like to be able to see a boundary to it and divide it from the next neat unit on paper. We like to work out the pattern as we ourselves in our own scale of values, in our own way of living, and in the background from which we came, believe other people should like to live. But everybody has his own way of living that is not perhaps in accord with our own. Instead of concentration on this creation of a physical unit, here now and forever, and unchangeable in our residential area planning, particularly in large cities, is it not more important to try to plan for the creation of a dynamic situation of growth and development, both social and physical, in the city?

I would like to illustrate that. In Philadelphia, during the last year, there has been a series of meetings of people in town who are concerned with local area planning. We know from previous studies that there is no such thing as a definable neighborhood in that city, and you can probably say that is true of any large city. You can find plenty of centers for one or another function but I defy you to find the boundaries because these things change. Planners have to have some kind of boundaries when drawing plans for projects, areas, etc. However, one of our mistakes is to assume that these boundaries have a social significance. In Philadelphia we got together people representative of the Health and Welfare Council, which is the health and welfare planning agency, the Housing Authority, the Citizens Council on City Planning, the Board of Education, and others, all technicians concerned with the problem of local area planning. All agreed that the planning for those three million people or so had to proceed not only from a central office but that it had to have some decentralization of focus. We also agreed that no planning that we were doing would have a great deal of validity if the physical and social planning were separated. So we were able to agree that we wanted to work as much as possible with people in the local areas. We know that in most instances we are starting with people who are there, the institutions, organizations, and ways of living, the values of those people, and also the physical pattern of buildings.

Is the planner in his wisdom going to say: "All this is beside the point!" Can this be swept away and can we create instead what we think these people need? Or perhaps dissipate the whole social structure in the area and substitute something else? Our approach is that in most situations of that kind we will start from the people and the physical structures we have and proceed from there; and, if that is the case, we want to take into our confidence the people who are there. We know in one area there are mixed groups,

Polish, Russian-Jewish, Italian, and Negro, with some kind of nucleus but no definable boundaries. There are institutions and churches and the people tell us they have close ties with their clubs and churches. One of our problems has been to search for two things: what really constitutes leadership among these people? And who really constitutes the sources of reliable information about the needs and difficulties and desires of people who are there?

We know the school districts overlap, that the school population changes from year to year in an area, and that the schools cannot have a permanently defined boundary line because they have to send children back and forth into other schools to use the facilities.

That is the approach we are using. Instead of planning by formula we have to break down the housing needs of people who are living in a residential area and recognize the variations in them and among various groups. We have to understand the needs of the various groups that are influenced by this environment: physical functions, service functions, social functions, and so forth. We have to try to understand the social and physical patterns of the city we are dealing with and the processes and forces of change in that pattern, and make use of that in trying to work toward what I tried to call a dynamic balance, a dynamic situation in which there is growth, in which change is a natural process as it is in all life. Cells die off and houses are taken away, people leave and new ones take their places. This growth should be in a direction in which people themselves and those who are working with them can progress always toward the adaptation of this environment to their own needs. We have to search for what some of us are calling an optimum of balance in the satisfaction of many peoples' needs and interests in the neighborhood by the elements and patterns that are there, and then try to enlist the interest and participation of the people themselves in this process. It can be done; it is being done in a number of places.

Whether or not you think it is important to create an atmosphere for neighboring or all these other relationships that have been discussed, it seems to us that many people do like to, and many more would, if they had the notion that they could participate in the thinking about the creation of the environment in which they are to live.

If we are to stay close to reality in residential area planning we are going to approach it from that direction rather than by the imposition of any formula that we may have developed previously on the pattern of the city.

By GERALD BREESE*

NEIGHBORHOOD unit planning apparently has reached that stage in its history in which, having long been used as a formula for solving urban ills, sometime with laudable results and sometimes quite otherwise, it is being subjected to a kind of scrutiny made possible by the concept's having been tried—to use a worn but good expression —in the crucible of experience. In this case there is a question, not only of the utility of the concept itself, but—and this is still more significant—of the nature of the premises and assumptions on which that concept is based. In the latter connection we are reminded of Miles Colean's statement[1] about a related problem involving means and ends:

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[1] "Fundamentals of Land Planning," *Architectural Forum*, October 1943, p. 66.

"Land planning is the science of adapting the surface of the earth to the uses we desire to make of it. The adapting part is easy [i.e., we have the skills and tools to do anything we want to do] . . . The difficult part of land planning is in agreeing on what we are to plan for and in determining how we desire to reach the objectives agreed on." (brackets mine.)

At long last, we are coming to realize that we must give more thought to ends, not means. After trying to apply the concept of neighborhood to urban environments, we have decided that it is time to re-think the problem, taking into greater account the human factors involved in the definition of a city as the social scientist sees it, "a relatively large, densely concentrated aggregation of heterogeneous individuals living under conditions of anonymity, impersonal relations, and indirect control" (Louis Wirth). We have come to realize that, no matter how much we have *wished for* neighborhood *realities*, the predominantly atomistic nature of urban life seems increasingly to have forced individuals into patterns of life which cancel out existing attempts to "neighborhoodize" local relationships.

The comments of previous panel members and the criticisms to be found in several published discussions of the neighborhood concept compel us to review the situation as objectively as possible in the hope of either emerging with some positive counter-proposal or proposals—one may not be enough—or, if the facts so dictate, of returning to the neighborhood concept modified by increased information on urban life. Unless we are to make mistakes similar to those made in the past, it will be well to base our counter-proposals or our return to a revised neighborhood concept on careful *research*. The following remarks indicate the nature of some of the studies which appear to be prerequisite to a sound decision.

The research projects prerequisite to an enlightened scheme or schemes for local area planning are arranged for the sake of convenience around four questions: (1) What is the meaning of "neighborhood" when applied to urbanized areas? That is, what are we after, what do we want in the local areas of cities? (2) What are the "givens" of urban phenomena which affect and condition the possibility of having such neighborhoods or their counterparts in urbanized areas? Approaching the problem from another angle: (3) Is it possible to create anything like neighborhood life in urbanized areas by providing the proper physical environment? If so, what is the nature of that environment? Then, lest we are left without a solution—for we *must* proceed on some basis: (4) If not the neighborhood, WHAT? Define counter-proposals. The projects themselves will be phrased in the form of questions, and will be suggestive rather than exhaustive in number and content.

(1) *What is the Meaning of Neighborhood When Applied to Urbanized Areas? That is, What Are We After, What Do We Want in the Local Areas of Cities?*

From one point of view, the somewhat indistinct halo associated with the neighborhood concept as the ideal pattern of life in urbanized areas has been placed there by proponents who remembered with nostalgia the claimed advantages of a way of life said to be characteristic of small towns. Whatever the case, the difficulties of reproducing such a pattern in urbanized areas have been so great that there is a call for re-definition of the concept with particular reference to city life. We need to know, that is, what it is we expect, what we want, in local urban

organization. This call for re-definition is a major research problem involving, on the one hand, reconsideration of the basic philosophy of needs and demands on which the concept was built and, at the same time, recognition of the prevailing characteristics of urban life today.

We can no longer afford to overlook the fact that the nature of social patterns in urban areas has undergone continuous modification since Perry's time under the impact of other urban phenomena. We must remember that the neighborhood concept was first publicly reviewed in 1923—some 25 years ago. Since that time, for instance, the incipient atomization of life in cities has been accentuated, not diminished, with the trend being away from anything resembling neighborhood organization throughout the urban area as a whole. It is questionable whether Perry's interest in providing the four classic prerequisites, namely "aesthetic satisfaction" with one's environment, safe access to elementary schools, safe access to congenial play spaces, and easy access to certain small stores and shops—irrespective of the admitted desirability of these aims—is enough to make "neighborhood" possible in today's cities, particularly in older and more densely settled areas (Perry himself noted that the neighborhood unit scheme could be more fully applied only to *new* developments.[2]) It is partly the unwillingness of the apologists for this scheme to recognize these realities and deal realistically with them which as much as anything has brought the concept into question. Previous discussants have indicated that the time is not only ripe, but over-ripe, for thoughtful re-consideration. Somehow—preferably in the light of extensive research effort—we must discover what urban people need and demand of the local areas in which they live.

(2) *What are the "Givens" of Urban Phenomena Which Affect and Condition the Possibility of Having Neighborhoods or their Counterparts in Urbanized Areas?*

One is brought, then, to the question of whether we actually know enough about the phenomena of contemporary urban life to re-define the urban neighborhood concept or to construct more appropriate alternatives for it. The point of weakness may be our lack of information on which to formulate a concept. Thus, our second question, the answers to which will determine the nature of the re-defined concept or the counter-proposals.

Clarence Arthur Perry has made the comment that the creation of neighborhood life is like growing a garden—one must know how to plant the seed, how to prepare the soil—that is, what "environment" to provide and the habits of each species.[3] Perry was aware of the complexity of the problem. The "givens" referred to in our second question pertain to those characteristics of urban environment, population, and social patterns which inevitably modify the nature of any concept such as neighborhood. Our contention is that precise knowledge of these "givens" should be prerequisite to the formulation of a pattern for urban life.

In assessing what we know about these givens, we note that during the last twenty-five years the body of information about urban areas has increased, not as much as would be desirable, but at least in such measure that it is perhaps now possible to view more intimately and comprehensively than in Perry's time the significance of certain urban phenomena

[2] Clarence Perry, *Housing for the Machine Age* (New York: Russell Sage Foundation, 1939), p. 52.

[3] *Ibid.*, p. 214.

for the neighborhood. It is doubtless true that, for the residential area in which Perry himself lived, the concept which it nurtured was appropriate; much of the difficulty in the extension of the idea came when it was applied to *other* types of residential areas. It should be the aim of research suggested here to add, to what Perry knew so intimately about a particular kind of area, all pertinent data about other types of urban areas, thus broadening the base on which the concept can be formulated, tested, or perhaps set aside for a more practicable alternative.

Five general areas of research are suggested for further attention if we are to arrive at some satisfactory concept of future urban residential patterns. They are not exactly blind spots in our body of existing knowledge of urban phenomena —in fact, they have been studied carefully in recent years—but they are the areas about which we need to know much more than we do at present.

The first area embraces the *physical structure of the city, the distribution of its functional areas, and the characteristics of land*—all closely related. We need more explicit and detailed answers to the following typical questions:

What is the nature of the relationships, ecological and functional, among different parts of the city?

With positional reference to what other functional areas of the city are the most, and the least, "unsuccessful" neighborhoods to be found? Why?

What is the nature of the differential operation of the ecological processes— concentration, centralization—decentralization, segregation, invasion, and succession—in various parts of the city, particularly residential areas?

What is the existing, and the desirable, siting of various types of land use and facilities in urban areas? How do these characteristics affect the possibility of setting up neighborhood areas?

Where do the various functions found in cities belong with special reference to residential areas? How does the answer to this question modify the possibilities of having, for example, neighborhoods in various parts of the city?

What are the existing and probable characteristic relationships between the location of place of work or daily activity and place of residence, and how do these modify neighborhood development?

What characteristics of the land use, land value, and land ownership patterns in urban areas affect the formation of neighborhood units? What limitations, both physically and socially, do such patterns impose on the formation of neighborhoods?

These research questions are representative, only, not exhaustive.

The following questions concerned with our second area, *population and its distributive and other characteristics*, also merit study before attempting to formulate a neighborhood or some similar theory:

How do the distributive and other characteristics of the population modify the types of neighborhood or other local units which are possible? How, for example, do differences in age, marital status, size of family, nationality, race, religion, etc., affect the possibilities of local social organizations such as neighborhoods? How can we achieve proper balance in the environmental needs of these population groups?

What characteristics of population related to density and overcrowding modify neighborhood formation and activities?

What effect do variations in the increased mobility of the population in different parts of the city have upon demands made upon local areas, such as neighborhoods?

How does the daily flow of population between place of residence and place of daily activity modify the type of neighborhood facilities required?

In areas which are either homogeneous or heterogeneous in population composition, what differences are observable in terms of social organization, facilities required, stability, etc., (from point of view of race, nationality, income)?

Just what are the claimed good and bad effects of homogeneous and heterogeneous

groupings, in terms of neighborhood life? What are the relative *desires* for homogeneity or heterogeneity on the part of the groups affected? Just what weighting should be assigned to these homogeneous-heterogeneous factors in comparison with the weight assigned to other factors considered in creating balanced urban neighborhoods?

How do the neighborhoods found in immigrant and segregated areas differ from those in other parts of the city? Are the differences consistent enough to permit appropriate planning for such areas before occupancy?

What are the prerequisites to BALANCE in neighborhood formation? Is it possible to identify the effects of living in balanced as against homogeneous neighborhoods—such as company towns, housing projects catering to one income group, etc.,—on children and other persons?

The third area of the "givens" embracing many questions which will have to be answered before a really definitive concept of neighborhood or other kinds of local area organization can be formulated is the *social milieu of urban life*. The following questions suggest what ought to be known before we attempt to determine what a neighborhood is in the light of known characteristics of the various urban social patterns:

What social needs of individuals are now met primarily through neighborhood types of activities? What needs could thus be met in an ideal neighborhood? Why the difference? Can it be presumed that, given the proper facilities, such needs would tend to be met within the local area?

How does this analysis of needs affect the provision of group and institutional facilities and organization in such local areas as, for example, a neighborhood?

What are typical patterns of leisure time use, particularly in terms of where the time is spent and at what activity? What differentials are observable among different segments of the population, different age and marital status groups, etc.? What are the time-money costs involved and how might these be adjusted by provision of leisure time facilities in local residential areas?

How are these patterns of leisure time activities affected by the locational patterns of work place, of public, private and commercial facilities?

What features of the pattern of citizen participation in civic affairs are related to differences in local area organization? What differences are observable in ideal neighborhoods as compared with conditions in segregated areas, close-in high-density areas as compared with suburban areas, etc.?

What devices have been used, and how successfully, to interest urban residents in civic affairs, particularly at the local level? What variations are observable? (E.g., could neighborhood feeling be successfully engendered by such devices as "stock" ownership of the community area by corporations of individuals, as Sert suggests?)

What municipal functions, what social activities, etc., might be returned to local areas for administration and organization to encourage citizen participation and local interest?

What are the social limits of urban neighborhoods as defined, e.g., by "participation" maps? How are these different for various segments of the population? What are the implications for the possibility of forming neighborhood units?

The *size of local residential areas* is also a critical given factor in the formulation of a concept like neighborhood. The determination of size cannot be solved in such simple fashion as arbitrarily drawing lines across a map at half-mile streets. It should be clear that other and more important considerations affect this matter. Only careful research such as has been proposed above will yield information on these critical size and boundary problems.

What size should local residential units be, in terms of variables such as density, type of housing area, natural and man-made boundaries, location of racial and ethnic groups, distribution of income groups, etc.? . . . What role does local history of the area play in determination of size and boundaries?

How should neighborhood boundaries be decided upon? Which types of boundaries are significant to residents in terms of their value for delimiting one area from another, and

thus inducing local consciousness and local responsibility?

Various *legal, governmental, planning and other controls* are also included among the givens under discussion. They play their important, but often unrecognized, role in the formation and delineation of local residential units. The more that is known about their influence, the more nearly sound will be the neighborhood or other local residential pattern to which they are related.

In what direct and indirect ways do such controls as the following affect the nature of local residential areas: zoning, deed restrictions, density controls, building codes, local tax policies, subdivision regulations, planning controls, architectural controls, etc.?

What practical problems in terms of neighborhood formation do cities present from the point of view of the proposals of various city planners, such as Howard, Le Corbusier, Wright, Abercrombie, Soria y Mata, Hilberseimer, the British New Towns designers, etc.?

One of the most fruitful sources of enlightenment on *all* of these givens affecting residential neighborhoods and similar local units might come from detailed case histories of both successful and unsuccessful neighborhoods. The stages through which they have passed, the reasons for changes observed, the characteristics of different patterns of functions, land uses, population distribution, etc., are often keys to understanding of the neighborhood-forming, or disintegrating, process. The control points critical to maintenance or formation of residential areas of this sort might well be isolated and studied through such case histories.

The multiplicity of the research projects dealing with these givens which ought logically to precede the formulation of a theory of neighborhoods or other local residential schemes is admittedly great, and has been only suggested by the foregoing proposals. But it does not seem unreasonable to hope that future planning of residential areas will be predicated on such studies. It is indeed a sad commentary on our culture that the environment of animals in Chicago's Brookfield Zoo and in the balanced aquaria we have in our homes is better planned than human residential areas!

(3) *Is It Possible to Create Anything Like Neighborhood Life in Urbanized Areas by Providing the Proper Physical Environment? If So, What is the Nature of That Environment?*

Much of the neighborhood theory of the past has been predicated, in one way or another, on the general idea that the provision of certain types of physical arrangements of land use, facilities, and controls will make possible the desired neighborhood. There seems some doubt, after twenty-five years of trying, as to whether this idea is sound. Granted that it is possible to create the physical setting for a functionally perfect neighborhood, the question remains whether the resultant will be neighboring?

It is not yet demonstrated, at least to the satisfaction of the speaker, that neighboring springs mainly from providing a certain kind of physical setting, no matter how ideal. Neither is it clear just exactly what the magic formula is, or what the ingredients beyond favorable physical conditions may be. It is merely suggested that it would be desirable to investigate more in detail any successful neighborhood phenomena for this answer. The assignment is most difficult and most complex, but essential if we are not to go off on this or another tangent which might prove less effective than we might wish. There is reason to believe that the present neighborhood formula is useful in many cases, particularly in the building of *new* housing areas such as high-

grade suburbs; but the problems in central cities, with their high densities and decayed condition, have so far rendered current efforts to create "neighborhood" quite impotent.

(4) If Not Neighborhood, WHAT?

The neighborhood concept could not have gained so many proponents without having much inherent merit. In this panel we have emphasized its numerous shortcomings. If the concept cannot be reworked, it is the obligation of research to provide a better substitute, an alternative which will be a next step in what it is hoped will be the most intelligently conceived direction. It is posited that any alternative based on the kind of research suggested above ought to be better than one conceived without such data.

Conclusion

The problems surrounding the building of desirable residential environment are so many and so ponderous that the prospect of housers and planners being misled by miscellaneous red herring drawn across the track of genuine search for better living is most unpleasant to contemplate. The "neighborhood" concept was heralded with such zeal as a panacea for many ills, and grasped with such uncritical alacrity by planners and housers alike as to make one suspicious that there was widespread conscious or unconscious lack of insight on their part regarding the nature of the human animal and his society for which they were trying to plan and build. A formula, a variety of formulae, or even just some valid principles, must be found; whether what we find is called the neighborhood or something else is of little importance. The condemning fact is that we should have been so incredibly ineffective so far in building desirable residential areas. It is not unreasonable to hope that careful thought and further research will uncover enough *in*sight to see the way *out*

Abstract of Floor Discussion

on the Neighborhood Concept in Theory and Application

THE multiplicity of research projects which need to be undertaken before housers and planners can know exactly how social relationships are patterned in local urban areas suggests that it might be a long time before such definitive information would be available. So, while there is merit in the negative approach—that is, long run critical analysis—to the neighborhood concept it is also apparent that action must be taken on the planning of local areas before all of the answers are in.

Much of the criticism directed toward the neighborhood concept stems from either its demonstrated unsuitability for parts of urban areas as they now exist, or from lack of knowledge about the characteristics of the local urban areas to which the houser and the planner attempts to apply the neighborhood concept.

An even more basic difficulty in planning for residential areas is the fact that people do not know what they want in their residential areas, in part because they have not had the possibilities made clear to them. The planner, therefore, is forced to work for his program of residential planning in the face of limited knowledge on the part of those for whom he is planning. This situation partly accounts for the lack of insight and information concerning what is needed in urban residential environment.

As the sociologist, for example, views the problem of designing residential areas, he faces problems which arise from the effort to reconcile conflicting theories and limited bits of information about the nature of social control in residential units of various sizes, the necessity of establishing neighborhoods or other local units which will provide the proper surroundings for maintenance of population balance, and so on. He does not even have data to prove how large a neighborhood or local area should be—whether, for example,

neighboring is characteristic of units of two hundred or two thousand persons.

The different characteristics of new development areas as compared with already built-up areas call for quite different approaches in designing local residential plans. The most critical problem is, of course, the rehabilitation of those parts of the city which already exist and are ripe for rescue or redevelopment.

From the point of view of the city planner, practical considerations and the pressure of existing conditions such as segregation of minority groups tend to modify substantially what can be accomplished in the re-design of residential areas. In addition to the obvious social factors involved, economic factors play a not inconsiderable part in determining the nature of local residential areas. What seems clearly indicated as the solution to such design problems, from a theoretical standpoint, often runs afoul of restrictive circumstances when applied to specific situations.

These and other limitations of data and local conditions generally operate to require major adaptation of the neighborhood concept particularly in the planning of local residential areas in those parts of the city which are neither old enough to be demolished nor new enough to permit major adjustment in planning.

For instance, there is no indisputable delineation—beyond the most obvious generalizations—of what the needs of people living in residential areas may be. Yet this determination of needs in specific situations is essential. The Philadelphia experiments described elsewhere suggest one method of determining these needs, through the analysis, not in terms of a static concept of a physical "neighborhood" but in terms of a specific local problem area, taking into account the residents' *own* formulation of their needs as discovered in the course of continued discussions with local officials, administrative officers and planners. The possibilities of such an approach are disclosed in an examination of similar experiments both in this country and abroad, as at the Peckham Health Center in London, and in various South African areas. It is in the course of such inquiries among the people themselves that the necessity of revising the concept of neighborhood size suggests itself.

It seems apparent, also, that technological changes—such as the development of expansible and demountable housing, particularly the latter—may appreciably modify what we have previously considered to be neighboring.

A formidable number of research projects must still be undertaken to provide housers and planners with the data they need.[1] Such investigations as the assessment of the effect of increasing mobility on the neighborhood, and the analysis of those functions and services which tend to root people to a specific area by virtue of their complimentary relationships, to mention only two examples, suggest what research must be done to substitute scientifically-determined data for the "educated guesses" on which interim planning for residential areas is forced to depend.

[1] The research planning monographs being prepared for the Social Science Research Council's Committee on Housing Research will present programs of research specifically related to this aspect of housing, particularly the monographs on *Housing Environment* and *Housing Standards*.

Panel II

Relationships of Technological and Social Research in Housing

Chairman: Clarence Farrier, Assistant Director of Housing Research, United States Steel Corporation.

Panel: Richard U. Ratcliff, Professor of Land Economics, University of Wisconsin; Vernon De Mars, Architect, Washington, D. C.; William H. Scheick, Coordinator, Small Homes Council, University of Illinois; Edmond H. Hoben, Director, Minneapolis Housing and Redevelopment Authority.

Chairman, C. W. FARRIER*

AS Chairman of this panel it is my purpose in this brief statement to define and outline the subject and to state its scope.

Social research is the objective investigation of the relationship of persons as living in a society, or of the public as an aggregate body. Technological research is the objective investigation of the relationships in the sciences and the so-called useful arts.

Social research encompasses the study of all the relationships and reactions existing and arising from our social order, the stresses that are set up by divergence from the norm, the relative values of components which make up the social order of the moment, and the effect of the whole social order upon the persons who make up that order.

Social research deals with relationships which are so far extending and complex as to require omnipotence for comprehension. Unlike technological research which can be carried on with inanimate objects, the components of which follow more or less fixed rules and can be studied in the laboratory, the animate objects making up society are slowly but constantly varying their behavior patterns and adjusting their attitudes.

Researchers in social science, being human beings, are not omnipotent. It is necessary for them to develop by the trial and error method a means of providing objective and reliable indicators of social trends, attitudes and behavior patterns. These indicators must be applied to society and its components as found in their material environment.

Because of the complexity of social research, its problems have been avoided until recently in favor of more simple problems of the physical sciences. The generally serious study of social science and its problems dates from about twenty-five years ago while the physical sciences have been more or less seriously investigated for about three hundred years.

The vast accumulation of knowledge regarding the physical sciences which past research has handed to us now makes our judgment about the behavior of physical things reasonably accurate and valid.

The lack of a comparable bulk of knowledge regarding the social sciences places those who must make decisions affecting society in the position where they must rely upon subjective opinion. Such opinion is only as valid as personal experience has conditioned him who generates it.

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Housing affects every member of society and, by the accumulation of effects upon individuals and families, must have an effect upon society as a whole. Public policy as to housing should be based upon a knowledge of the relative value of housing as a social asset, as a shaper of social behavior and attitudes, and as a factor in public health—both mental and physical.

Because of lack of knowledge regarding these basic relationships, public policy is now determined largely by the subjective opinions of those in the political arena. Their opinions are as varied as their individual experiences and consequently we have the ideal condition for deadlock and inaction or, what is worse, wrong action.

The relationship of social research to the housing problem on a national scale is fairly clear. It is also clear that the results of technical research in housing may be wide of the market until more of the social facts are known. What are the essential minimum standards of housing for a reasonably healthy society? How far can we depart from the norm without creating undue strains?

Going from the level of national policy to the housing problem of the individual, here also the most effective efforts of the technologist must depend upon the knowledge about the social order available to him. How high are the housing standards that should be aimed for without stunting a well-rounded out family life? Standards that are too high may impose a financial strain upon the individual which could cause him to go without things of higher social value. The technologist can produce housing which is ideal from the standpoint of convenience, safety and health but, if in occupying such quarters the individual family is thereby bereft of the enjoyment of some other important social value, the technologist's effort cannot be called a success. We are inclined to look down our noses at the family who lives in a shack so they can own an automobile, or the six persons who live in one room and yet pool their resources to buy a television set; but are we sure we are right?

Important as are the considerations having to do with the welfare of the individual family, such are but a part of the social significance of housing as a factor influencing society as a whole. Departures from the norm of the quality of housing in our own country are of a far lesser extent than we find in most other countries. There are those who hold the opinion that in this country we do not have a real housing problem, in a social sense, and that our divergence in quality is natural and inevitable. The fact that we in this country have a comparatively peaceful social order and that in other countries there is a more turbulent social situation indicates at least there is a possible relationship between the productive capacity of a country, its housing, and its social equanimity.

We say possible relationship for the reason that wide divergences in the quality of housing available to the people of a country are always accompanied by similar divergences from the norm in either or both economic and social status. It is very difficult to identify the factorial value of housing's influence in this complex.

It is the contention of some that, regardless of cost either economic or social, the departure from the norm in the quality of housing should be greatly narrowed. But even this apparent truism should be objectively scrutinized because what society is seeking is an order which allows each family to choose a life which to them seems a balanced one. If the balance is lacking through either economic pressure or excessive regimentation, we have not arrived at a successful solution.

Today no sane man disputes the fact that the earth is round rather than flat, nor that the world is not the center of the universe. There was a time not so long ago when these commonplace facts were the subject of violent controversy and legislative decree. Research and investigation established the true facts and the controversy melted away.

Housing today suffers from such blind controversy, which leads each of us unconsciously to opinions serving our own interests. Hence we find ourselves in an aimless rat race of the housers, the real estate interests, the builders, etc., each criticizing the motives of others with the outsiders looking on bewildered by the aimless whirl.

Controversy will continue its aimless course until such time as a pattern emerges which is based upon ascertained facts and not upon unconditioned opinions. A clear pattern will not emerge without extensive and time-consuming social research. Without this pattern the technologists must join the rat race.

Before introducing the other members of the panel for their discussions and then opening the meeting for general discussion, let me quote the introductory paragraphs of a paper on the subject of our discussion by Dr. Louis Wirth, Professor of Sociology, University of Chicago, which were reprinted in the June 1948 issue of the *Journal of Housing*, and which is recommended to you for reading. I quote:

"That housing is an important practical problem needs no argument. If practical problems are to be dealt with intelligently, they obviously require the foundation of sound knowledge. The knowledge required to deal intelligently with housing includes not merely what all of the social sciences have to give but also the technical knowledge that architecture, engineering, art, law, administration, business, and other professions can offer.

"Housing is a social activity. As such, sociology has something to learn from it and it constitutes a subject matter for sociological study. Sociology also presumably has some knowledge to bring to housing problems."

By RICHARD U. RATCLIFF*

I AM learning that, in the interests of mental health, one should never question too seriously his own objectivity for I stand before you today tortured by a gnawing uncertainty of my own intellectual honesty. I have labored long and hard to prepare an impartial appraisal of the relationships between research in the physical and social sciences. I have much to say on the contribution to be made to physical science research by an understanding of the social and economic aspects of housing but embarrassingly little on how the economist and sociologist, for example, may benefit from work done in the technical fields.

On the other hand, I must admit that we social scientists stand somewhat in awe of technical research. We are impressed by its laboratory techniques and by the objectivity and precision of measurement. Where the social scientist must scramble to compile scattered records on human behavior subjectively reported through diverse techniques, the natural scientist stands calmly in his laboratory, surrounded by Bunsen burner and balance, and measures things to the thousandths of an inch. He works within a scientific framework of immutable principles of physics and chemistry rather than on the assumptions and untested hypotheses of social behavior.

It is observable that much of the technical housing research of which we hear is engineering research, i.e., the application of accepted principles to specific practical problems. Applied research in the social fields is much less effective

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through the lack of a satisfactory scientific framework of established principles and thus much of the research energies in the social sciences must be directed to basic research so that we may extend and strengthen this framework. Only in this way may we look forward to successfully solving many of the practical problems of housing.

But it is not my prime objective to bemoan the weaknesses and primitive stage of social science research. We are making progress and shall push on relentlessly. Social research has contributed to the improvement of housing conditions and will do much more in the future. Our prime concern today is the relationship between technical and social research in housing. We have reminded you of their common objectives and their disparate methodology. Others will discuss what the technician wants of the social sciences. Let me, as a social scientist, record a few observations on the relationship of the social scientist to technical research in housing.

First, a brief demonstration that the usefulness and significance of technical research must be measured finally on scales of social values, in terms of the effects upon individuals, family groups, communities. The common aim of all housing research is to improve the standard of living with respect to housing. We seek better housing, preferably at no greater cost, or we seek a lesser cost for the same housing. Now the terms "cost" and "better" are in need of definition. Even the simpler concept, that of "cost," is complex and is an economic, not a technical notion. Housing which is less costly as a result of technical research may be less costly in terms of original outlay, upkeep, or length of useful life, or some combination of these three aspects of cost. To determine the savings in cost requires an economic calculation.

The term "better" is hopelessly complex. Housing can be better in terms of purely physical effects on human occupants, in terms of the burden on their pocketbooks, in terms of psychological considerations and, in general, in terms of human welfare. True, the purely physiological factors are matters of natural science but all the others are in the realm of the social sciences.

The technician is not unaware of this truth but he may incline to overemphasize the matter of cost or the elements of purely physical effects on human beings. He may undervalue the effects of technical advance on the mental health of the family members, on the social relationships within the family, and on the relationships of the family group to the larger neighborhood and community environment. For example, where new methods or new materials either restrict or emancipate the designer, the social implications of the resulting space planning—the interior arrangement of the dwelling—may far outweigh in significance the effects on cost and efficiency of construction. From this standpoint the successful adaptation of the folding partition for residential use has far greater value to society than does the development of radiant heating.

Having established the principle that technical research must be tested largely in social terms, we can turn to a specification of aids which the social scientist may be able to provide to technical research. The first proposition is that the social scientist can be useful in identifying useful areas of technical research, or general problems for research where technical advance will yield socially significant results. He may even establish general priorities of research objectives by evaluating the relative social importances of possible findings of technical research. Let me give you an example.

One cannot dig very deeply into the problems of housing before uncovering that pervasive characteristic which is the physical inflexibility of the housing structure in face of a dynamic cultural environment. In our study of the economics of the slum we find we are continually meeting up with the fiscal effects of this inflexibility. Housing which, at the time of its construction, was perfectly appropriate within its urban environment and well adapted, under then existing technology, to the intended occupancy, is now found to be inappropriate. The resulting compromises and artificial adaptations whereby the owners struggle to maximize returns at the cost of social disorganization and human discomfort, are well-known social menaces.

Another study, which deals with the ecology of rental housing, is revealing some of the manifestations of the physical fixity of the housing structure. It is showing how the tenancy pattern is the product of a compromise between the physical, cultural and financial needs of the family group, the locational immobility of the housing stock, and relative fixity of the internal space arrangement of dwellings. We social scientists might urge upon the technicians in the housing field that our basic housing problems may never approach solution until we are able to reduce this vastly significant inflexibility which hampers the adjustment of the housing stock to the needs of society. We might ask whether portable or demountable houses are practicable. Can houses be successfully expanded or contracted? Can internal space arrangements be economically adjusted to changing family needs? Can the burden of depreciation be reduced and the urban land use structure made flexible by the development of a short-lived, low-cost dwelling? Let the research of the laboratory be focused on these questions and the problems of housing, city planning, and of urban redevelopment will be greatly modified.

A second point of contribution for the social scientist is the testing of the acceptability and marketability of new products, methods or materials. It is not infrequent that advances which might contribute to human comfort and well-being are not perfected and marketed because of the uncertainties of public acceptance. The capital investment and risks which confront the entrepreneur in the manufacture and distribution of the product form too great an obstacle unless there is assurance of consumer acceptance and a sufficient, effective demand. On these practical economic questions the techniques of market research can throw some light.

A third proposal is that social science techniques may be useful in evaluating the possible disruptions arising from major technical advances and in providing the basis for controls to ameliorate undesirable repercussions. Should some engineer or scientist discover a method of converting a cornstalk into a six-room house in seventeen minutes at a cost of $23.71, there would be created social and economic problems which might approach in magnitude some of the issues of the atomic era. But it is not wholly absurd to envision an evolutionary development of factory-built homes sufficiently rapid to create major disruptions in the building industry, in the structure of property values, in the soundness of financial institutions, and in the urban way of life. I should not recommend that we inhibit technical developments simply through fear of disrupting existing institutions. On the other hand, the social scientist might put his mind to evaluating the probable effects of major technological advances as a basis for the application of possible social controls to reduce the

initial frictions of introduction or to prevent from the start the misuse of the product or process to the detriment of society.

Finally, we turn to a recommendation for social scientists—that they be eternally alert to technical developments in the housing field. The study of social phenomena in the housing field as well as any other field is conducted within a dynamic social and technological environment. The social scientist must be alert to the implications of scientific discovery and engineering applications of new principles, materials or methods. Human behavior may be substantially modified by such developments. Observations and conclusions based upon today's technology may require significant revision as the technological environment is altered.

You were warned at the start that I had little to say on the contributions which the technicians might make to the advance of knowledge in the social sciences. Frankly, I believe there is little they can do in this connection. Not that they cannot make major contributions to the solution of social problems (with a hand from the social scientists) rather that the technician can take little part in the most urgent task of the social scientist, i.e., the establishment of principles and relationships with which to form a framework of fundamental housing theory.

By VERNON DEMARS*

THE idea of research is thoroughly accepted by modern man. Without research, he knows, there would be no airplane, no movies, no safety pins. He has come to think of research as purely technical—something done in a laboratory which, after countless experiments on radium or white rats, ends in an obviously useful product like penicillin or atom bombs.

Social science research he considers "long-haired" and approaches it with a jaundiced eye and a ten-foot pole. Mr. Gallup has, of course, done a good deal to break this down, even though some consider him pseudo-scientific and question his sampling technique. "Modern man," though, thinks he *is* scientific, sociological *and* successful—with his findings syndicated in several newspapers to prove it. It isn't often, of course, that "long-haired" research hits the best seller list.

Still there is resistance. The aircraft industry spends millions on a single plane. It is tested in every conceivable way, perhaps even with the rudiments of social science. (Would the pilot be happier with the seat farther forward? Would he be less frustrated with a wider view from the astradome?) Such problems would rightly consume a minute share of funds available to aviation research—something like the share that social aspects of housing are likely to receive in a federally-sponsored research program.

For everyone can understand the need for a better brick, block or board, and some yearn for a cheaper something to replace them all; but as to how it will be used—to what purpose, for what ends, well, everyone knows how people live, you don't have to go around asking people what they want in a house, everyone knows that! At least you'll find no doubts among the Homebuilders of America or the Federal Housing Administration officials.

Still one has a right to ask, "What kinds of problems in housing are most in need of social science study?" "All kinds," one might answer, but for the present, certainly, the emphasis should be on studies that can lead to specific

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and practical application. Perhaps here the burden is on the technical houser, the architect or planner, to define or even to recognize his problem and then, with the social scientist, to map the strategy.

While associated with Mr. Farrier in the National Housing Agency I took an advisory part in a study which will illustrate what an architect or planner means by "practical." The National Housing Agency was called upon to sponsor (though not to finance) a survey by the Pierce Foundation. This was to be an extention on a nation-wide scale of the intensive technique which the Foundation had used on a pilot study in the New York area. The technique was intensive both in subject and in method. The problems and habits of family living were segregated for study and the "bedroom-bathroom" part was being tackled first with a carefully selected group of families being interviewed on several visits for a total of two hours each.

We in the National Housing Agency were familiar with the study and the interesting results so far and we thought the technique a very sound one. We balked however at the thought of a 2-hour interview with 1000 families in 10 cities in the United States giving us only such limited information. We helped select the cities and the housing projects —a greenbelt town, some public housing, some war housing, even trailer camps. The National Housing Agency agreed to sponsor the study if one-half hour of the two hours per family were devoted to questions of particular immediate interest to us, and which we felt gave answers to specific planning problems; questions on the use of front door or service door, location of garbage disposal or collection facilities, attitudes toward where and how laundry should be hung out, toward parking cars, toward sunlight and orientation, toward living room outlook (street or garden). The results were enlightening but not really surprising. Most of it made common sense. I made use of these special findings in the design of some row houses which were exhibited as models at New York's Museum of Modern Art in 1945. I was a little surprised at the favorable public reaction to a house type usually considered only as an expedient for crowded land. I believe that the design and the service facilities in particular, based on the survey findings, carried such conviction as to make the whole scheme unconsciously acceptable to the public.

I do not mean to depreciate the value of the other part of the survey, the minutely analysed "bathroom-bedroom" relationship. It would have a place in any large, really long-range research program. But there was less we could do with the findings. Most of the problems were caused by too little space, and would be solved by more space, which we knew already. Perhaps this is just saying that there is a certain priority in the problems for which housing needs answers.

As a further example of problems that planners and students of housing would like a little light shed on, I will cite from parts of a housing research program proposed by the National Housing Agency in 1943. Some parts of this program have since been carried out. For instance, several national surveys on family living have been made. A mass of material was gathered toward an evaluation of war housing and public housing experience, and part of it published in the Federal Public Housing Authority's volume on the *Design of Low Rent Housing*. At least a beginning was made on a restatement of minimum housing standards on a performance basis rather than a minimum area basis.

A portion of the program dealt with the study of dwelling types, a task of some magnitude if it was to be at all compre-

hensive or conclusive. To my knowledge this study is yet to be undertaken. Its purpose was stated thus: "To investigate all aspects of the different possible dwelling types from one-story detached houses to multi-story apartment buildings, to determine under what circumstances each building type is most satisfactory for a given kind of family composition, and finally to determine how these types compare in terms of costs, of land coverage, services rendered and energies expended in servicing completely the required activities."

I should like to read excerpts from some parts of the proposed study. Under "Detached Houses" we asked: "Under what conditions, then, is a community of detached dwellings attractive and satisfactory and when is the reverse true? What are the apparent reasons in both cases? Can the findings be formulated into a guide for site planners?" Another question was: "What site planning problems will numbers of identical prefabricated houses present and what are some possible solutions to these problems?" and another: "What flexibilities are possible in the dwelling unit itself for changing family needs?"

Under "Row Houses" we asked: "Where are lines of demarcation indicated between detached, duplex, row and multi-story types when required densities increase?" and "How do row houses for rental differ in conception from row houses for sale?" Two other questions under this section were: "What improvements are possible in the concept of the street as a public service element and the garden site as a private living element? Under what circumstances does the concept of the street as a promenade, and therefore a social element, still have validity?" and "How may or should the row house be combined with other dwelling types in community planning?" There were questions then on walk-up flats, elevator apartments and even apartment hotels.

I should like to finish my observations here by reading from the section on "Community Planning Considerations." It will be seen that these questions are charged with problems—some only to be approached by the social scientist, some a matter of planning, laboratory or permanent, or pure design, while others can only be tackled by the closest collaboration of techniques in both fields.

"The majority of housing developments, public or private, good or bad, appear to be framed in a new pattern completely unrelated to the pattern of the rest of the community. In a certain sense this is as it should be, a new conception of living making a clean break with the past. Still it is somewhat difficult to conceive of a complete city built on the pattern of almost any housing 'project', or even several combinations of them. The question then is whether the institutional 'island' character of a housing project is altogether natural or desirable.

"1. How should rental housing relate in land pattern to owner-occupied structures? In what manner might the two be mixed?

"2. There obviously will continue to be a time element in the development of any community. To what constructive use then may vacant land be put in the scheduling of community growth?

"3. What are the total considerations involved in our planning of 'neighborhoods'? What are the natural and desirable grouping of families with children and families without children, single persons, old people? Of what should the neighborhood consist in the way of mixture of these family types, combination of sub-groups or segregation according to specific family types, races and interests?

"4. Finally, should not those features, characteristics, and even design, which are found desirable for one kind of housing, be applicable to all types of housing, the character differing in degree rather than in kind? Why necessarily should 'low rental housing' or 'low income group' be expressed everywhere in a housing development by the character of the architecture or the attitude of the architects and planners as expressed in the final result of their efforts?"

By W. H. SCHEICK*

MR. Farrier suggested that my part in this panel discussion should be as specific as possible based upon my experience in housing research. This experience has covered four years, since I left the teaching of architecture to direct (or coordinate) the program of the Small Homes Council.

People ask what the Small Homes Council is: The Council is a "cross-campus" division of the University, acting as a coordinating agency for housing research. Its program was defined by an advisory committee drawn from all departments that felt a relationship to housing problems, whether technical, economic, or social. Our approach has been confined to the single family dwelling, or house, but with the broadest objectives possible within the potential resources possible in one large university. Our work includes research, "education" of the short course variety, and "publication" as represented by our Circular Series with which some of you may be acquainted.

After four years I find no criticism for the original concept of our program. The objectives are becoming more sharply defined, and the size of the task constantly seems greater. We recognize weak points where we possess neither personnel nor facilities for research.

My own attempts to carry on our work have been necessarily promotional in many respects and have brought me into contact with many people more or less familiar with research, especially in technological and industrial circles. On rare occasions, such as this, I have opportunities to talk with people whose chief interests lie in the social, economic, or aesthetic phases of housing.

Perhaps, because I am an architect, I think I am a fair "middleman" for the discussion of all kinds of housing problems, possibly making me a target from both sides. At any rate I feel that I have a comprehension of technical jargon, and a realization, at least, for the need of understanding the languages of the other sciences. From my experience, I think that housing research is a veritable Tower of Babel, with no interpreter between one line of research and another, or between the "academic" and the practical.

From the beginning I have wanted to know and understand more about the social and economic sides of housing, because I have an ever-strengthening conviction that the solutions to our biggest problems have their roots in social and economic research. In a general sense, technical people are more conscious of economic pressures than of social pressures. The question of cost of housing is obviously responsible for much of the research being done. Even in view of this fact, technical researchers are strangers to the fundamentals of housing economics. I doubt if I need to tell you that I cannot press these theories of mine very strongly with technical or industrial people when trying to promote financial support for a project. Among hard-headed engineers I can make a fair pose of speaking your language when I dare, but Ernest Fisher one time showed me in short order that I really have only a smattering of ignorance in economics. Same is true for sociology.

The important point in these remarks, in my opinion, is a tremendous one, namely, that we must establish a common language in housing research without delay.

Coming back to our work at Illinois, it is no secret that "housing research" prior

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to the establishment of the Small Homes Council was almost exclusively in the field of heating. This was in no sense unfortunate, because heating research is years ahead of any other research related to housing, and the mechanical engineers at Illinois and elsewhere have developed excellent techniques in both basic and applied research. I am sure that researchers in other fields can learn much from the heating experts, who work with clearly defined objectives and methods. I believe that something as tangible and as nearly absolute as a B.T.U. is needed and may be found for other kinds of research when we set ourselves to the task.

Heating research, however, is naturally the kind which I classify as being "up a technical alley" as far as housing is concerned. It will never solve housing's big problems. Other technical alleys are usually confined to product development of isolated building materials. Our first indication of interrelation between heating and other sciences is appearing in our curiosity about the use of large glass areas in house construction. The problems of sun and daylight at first would appear to be those of heating and illumination. But, in planning, they quickly transcend simple heating questions and involve architecture, psychology, and home economics—in other words, problems related to the effect of large glass areas upon the occupants and their use of the house. I suspect that sociological implications are involved as well, because the cost of glass may reserve its advantages, if any, for a favored few.

A much more obvious tie with human problems of living is exemplified in a current project having to do with planning kitchens and laundries on the same floor level of small (basementless) houses. In this case the sponsor called for *planning* studies rather than the familiar "time and motion" studies typical of some kitchen research.

In such planning research as this the architect is immediately confronted with questions about the way families live, what they want, and what they can have within their means—usually very different things. Our work at Illinois is purposely directed toward lower cost housing because we know that there is no problem for the homeowner who can pay for anything he wants. Planning has to do with space, and space has to do with functions of living and dollars of cost. Surely these are social and economic problems, and sooner or later our kitchen-laundry project would benefit immensely by direct participation by experts in these fields. I would like to have them tell us, for instance, something definite about housekeeping in the social sense. I would like to know about the use of appliances in the economic sense.

Several of our staff are now continuously engaged in "unsponsored" architectural or planning research for the entire house. I am sure now that basic housing research must go back all the way to the planning stage, where consideration of the whole house in design and structure precedes piecemeal "technical" research on individual materials or items of equipment.

We have enough to do on this project to keep us busy for a while with planning principles more closely related to the *structure* than to the human use of the house. Our attention is turned chiefly to principles of modular planning, flexibility of structure and plan, standardization of parts, expansible "unit-type" plans.

As far as I know, little worthy of the name research has been done along these lines, but again such work is actually concerned with producing the technical tools for genuine housing research. Ultimately, house planning research must reach the

fundamentals of space usage for family occupancy. Does anyone know anything available on this subject other than F.H.A. minimum requirements?

I like Professor Riemer's chiding remarks in an article in the *American Sociological Review* about architectural "functionalism," which appears to him to be whimsical and rather chaotic. I think he is absolutely right. The architect can only assume and guess about the functions of housing, and this, my friends, is not research. He is no better off on his judgment of the economics of space planning in relation to the economics of ownership.

I hope I have convinced you of sincerity in my beliefs concerning the necessity for a closer tie between the social, the economic, and the technical. But I must bring one charge against your fraternity, based on my experience to date. Louis Wirth, in his paper of December 1946, outlines the broad objectives of sociology in housing. I have no argument with him on this score. However, I find some sociologists and economists too prone to deal *solely* with the broad objectives, as though specific details were beneath the dignity of their professions.

In my analysis of the need for sociological information in planning research I was talking about *the house* and the *family* in terms that must be translated into *feet and inches and dollars.* In technological research we have some very visionary, broad objectives that must be steadfastly kept in view while ploughing through a mass of detail. Due to the fact that we are face to face with extremely critical housing problems today, I propose that this is not the time to devote *all* of our efforts solely to the broadest theoretical or academic objectives. This is a time when a specific improvement, even though of minor importance, is urgently needed. I think this must be true for any phase of housing research. Obviously, if we had a coordinated, balanced and mature housing research program in action nationally, there would be a plan of progress that would maintain a balance between the specific and the general, the applied and the basic, the practical and the theoretical.

I know that technical research men are moving toward a plan for coordination of housing research. This is in evidence in current activities to establish a Building Research Advisory Board still conceived, however, as essentially a technical body. I know that some technical men are aware of sociology, economics and political science as major areas for housing research.

I am not sure that the technical and (for want of a better word) non-technical research *people* understand *each other* or that they have any real intentions of getting together for the purpose of learning how to do so. I see no promising future for genuine housing research until they do.

By EDMOND H. HOBEN*

MY remarks will have a particular bearing on public housing—the field in which I have been active for some years.

It occurs to me that both technological and sociological research in housing must be thought of in terms of their end product much more than is customary to think of the end product in so-called "scientific" research. We have been given to understand that the true scientist is supposed to look neither to the left nor to the right,

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but to concentrate on determining the exact and ultimate truth, regardless of the consequences of applying this truth. He must go to the stake maintaining doggedly that two plus two equals four, even though, by force of economic pressures of inflation and related social practice, the populace has become convinced that it is only three and one-half.

I do not maintain that the chemists should admit to the sacred family of elements irium, simply because the mention of this material might cause more people to brush their teeth and thereby improve generally the public health. However, in housing one might well make a case for stretching the definition of research to include the effective selling of the findings to the reproducers and consumers of housing and, more important yet, in the field of public housing to such policy-making groups as housing authorities and city councils.

Ratcliff has made reference in this symposium to far-reaching social decisions through legislation and administrative determination that are not based on scientific findings. One is reminded of the cost limitations on the construction of rental housing that are found in national legislation and that are exercised in fact by local legislative bodies when approving housing projects. The technologists and the sociologists may have been successful in proving either to themselves or to each other that low cost without careful relationship to annual cost is a great mistake. I would like to broaden sufficiently the definition of research to include the joint preparation of technical and sociological findings in form sufficiently convincing to educate both the policy-making groups and the consumer. It is the lack of informed judgment in the aggregate on the part of the consumer which permits the continued production of housing that is expensive in terms of dollars and satisfaction.

Our research must succeed in raising the standards of the consumer of new housing so that he will know he is getting unsatisfactory housing in small, cramped dwellings full of the latest fads and located without reference to neighborhood amenities or community services. Otherwise, we may not expect to find among the policy-making groups, which, after all, represent the collective standards of the common man, any recognition of what the scientists have found to be true and good. Nor may we expect to find on the part of the citizen, who lives in the old housing and who is not in the market for new, any awareness of the deficiencies of the new supply.

The remarks of other panel members regarding the flexibility of subject material in sociological research, as contrasted to the inflexibility of material in technical research, are particularly significant. Perhaps we have gone as far as we should go, or too far, in attempting to devise plans where every square inch is assigned to a given function and the functions are divided up according to the various hours of the night and day. As a result of these technical and sociological computations we then force a family of a given size into a specific number of square feet. The flexibility of the subject then has some interesting results. The family may exhibit flexibility by choosing to use space in an entirely different manner than that for which it was intended, thereby upsetting all of the careful calculations and causing a series of new social and technical problems.

In my opinion, our combined social and technical studies, in spite of the emphasis on design in terms of management, have been colored too much by the concept of the researcher of what is good for the family. For instance, we have set up extensive patterns of design and manage-

ment control pertaining to the joint use of common facilities by tenants. Almost any experienced manager of housing developments where laundries, stairs, or other facilities are used in common is ready to tell the researchers in no uncertain terms that the joint use of these facilities is not a natural activity of the tenants, and that the promulgation and enforcement of rules and regulations, either directly by the management or indirectly by the tenants under considerable persuasion or force from the management, constitutes one of the major management problems.

Perhaps what we need is more flexibility on the part of the researchers—at least flexibility that allows for the tenants being human beings rather than arithmetic quantities. Possibly this means making social science less of a science—a move contrary to the desires of some who wish to make the social sciences more exact.

I look hopefully toward the day when, as a result of this increased flexibility, low-rent housing projects may become less institutionalized and may resemble much more, in terms of both tenant responsibility and freedom, the pattern of either home ownership or rental of private property into which the public-housing tenant is supposed to move after a few years' residence in the public project.

Abstract of Floor Discussion

on Relationships of Technological and Social Research in Housing

SOCIAL research in housing may have to become more highly specialized than it is at present if it is to make a real contribution to knowledge about housing. To date, social research has dealt with such broad fields of inquiry that the technician and the practitioner consulting its findings for aid discover little which can be applied to specific situations. At the same time that it becomes more highly specialized it must exercise care not to lose sight of its orientation to the most significant problems in the entire field.

In addition to the research areas suggested in the prepared papers, the significant factor of "costs" must not be overlooked, affecting, as it does, the whole gamut of housing problems, social and technological.

Likewise, the role of art and beauty as components of housing and environment needs further emphasis and study beyond what it has heretofore received.

There is adequate evidence that, just as the housing problem cannot be solved without the aid of technical engineers, it must also have the benefit of "social engineers" equipped with both training and data for the purposes of guiding the solution to housing problems and establishing housing policy.

Technological research is still greatly restricted in its attention to many pressing problems because its subject matter is largely controlled by its financial sponsors. The distortion characteristic of this situation should be corrected by the provision of subsidies permitting research on other technical problems of design and materials not at present under study but having significant potentialities.

The limited extent of active relationships between technological and social research in housing underlines the necessity of extended joint participation in the study of housing. It is likely that the full usefulness of social research on housing will not be experienced until it becomes part and parcel of the process of technical planning and design. The development of closer laboratory-studio contacts between social and technological research personnel on specific housing problems would appear to be one means toward reducing the present isolation of these groups and achieving fruitful cross fertilization.

Benefits gained by such collaboration could be supplemented by devices for improving exchange of ideas and research findings between the social scientists and the technicians engaged in housing research. One practicable and potentially helpful step in this direc-

tion would be the establishment of a clearing house for such contacts. Another step would be the regular meeting of personnel from both research areas at key research centers throughout the country, providing a vehicle for exchange of ideas and techniques while work is actually in progress on specific housing problems.

Panel III

Measuring Effective Demand in the Housing Market

Chairman: Ernest M. Fisher, Director, Institute for Urban Land Use and Housing Studies, Columbia University.

Panel: James C. Downs, Jr., President, Real Estate Research Corporation, Chicago; Howard G. Brunsman, Assistant Chief, Population Division, Bureau of the Census, Washington, D. C.; Donald S. Thompson, Vice President, Federal Reserve Bank, Cleveland, Ohio; Arthur M. Weimer, Dean, School of Business, Indiana University.

Chairman: ERNEST M. FISHER*

THE measurement of effective demand in the housing market is a topic which needs some clarification. The terms employed are used very ambiguously and it seems necessary at the outset to indicate the meaning which we must give to these terms if discussion is to be fruitful.

The first term needing clarification is the "housing market." The expression is used in a number of different ways. We have fallen into ambiguity by the very adoption of the term. Actually, the services of land and improvements are bought and sold and exchanged in an infinite number of markets widely scattered geographically and otherwise, and partially insulated from each other. "The" housing market probably signifies some over-all summation of the situation which exists or is projected in these multitudinous markets. Any such summation, as all experienced in statistical analysis well understand, is at best a sketchy description of the major characteristics of varied materials. The wider the variety in the materials, the more misleading is likely to be this sketch of their principal characteristics, the more essential it is that the variations summarized be further described.

But even summarization of the principal characteristics of the transactions involving sale, purchase and exchange of the services of residential land and improvements for an area of any considerable extent is a major undertaking. Since we come from a wide area we shall have to confine our discussion to those general characteristics common to the major portion of the infinitely large number of markets and we shall exclude the variations. In other words, we shall brave the hazards of generalization.

We are talking in this discussion about transactions in which the services of residential land and improvements are bought, sold and exchanged between buyers who try to buy at the lowest price possible and sellers who try to obtain the highest price possible. We are concerned with the volume of these transactions and with those forces which determine the prices at which they are consummated. When they are purchased as leasehold estates, price is expressed in rent. We are concerned, therefore, with prices and rents and with the forces which determine them.

The traditional economic analysis of market behavior deals with demand and supply and their equation in price. The familiar demand and supply curves meet at a point where they are equal at a price. The demand curve falls as price increases and the supply curve rises. Eventually, if the supply curve has started

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at a point below that of origin of the demand curve, they must meet.

The rate at which the demand curve falls indicates the elasticity of demand, and the rate at which the supply curve rises indicates the elasticity of supply. We know very little about the shape of these curves, but some data have begun to appear from which their shape at a given time can be faintly discerned. We need much more data to enable us to discribe the shape of these curves.

But this hypothetical analysis applies as of an instant of time. In time, the shape of both the demand and supply curves probably changes, and the usefulness of analysis would be greatly multiplied if we had a better understanding of the forces which cause the changes. All we can say about either the shape or the changes in the shape of these curves is that we believe that at a given time there is a greater elasticity of demand than of supply. In the long run we suspect that the supply curve is changed principally by additions to the total supply and by very insignificant diminutions. Since our topic is measuring effective demand, we shall have to defer to another occasion the examination of the forces which influence the shape of the supply curve at a given time and the changes which occur in it over time.

There exists a great deal of suspicion that one of the forces which affects the the position and shape of the demand curve is the total population and its composition. We have come to speak loosely of families and households as the demanding unit. For purposes of measuring effective demand we need refinement in the definition of this unit and of the forces which determine the number of the more accurately defined units with which we deal. One of the panel members will address himself to these problems.

We have also long suspected that income or purchasing power of the demanding unit is influential in determining volume of effective demand. But the way in which purchasing power is expended is largely the result of individual decisions made on the basis of individual scales of values. We know little about the forces which determine these decisions and what changes take place in the scales of values. Another speaker will discuss some aspects of the influence of changing incomes and purchasing power on effective demand.

At a given time, the demand schedule is represented by a curve which represents the amount of housing utilized at given price schedules. How changes in that price schedule would affect demand, we know little about, and there is little material which illuminates the question of changes in demand schedules in time caused by changing prices. Another member of the panel will discuss some of these problems and the opportunities for research connected with them.

In addition to contributing to pure science or better understanding of human behavior, analyses of effective demand are needed for many purposes basic to our business and economic affairs. A better understanding would probably lead to more intelligent decisions by individuals who are a part of the economic and business elements in our national economic life. The decisions which these members of society make result in the better or worse functioning of our economic machinery and determine the kind of housing in which we live. They need more than a statistical analysis of the situation at a given time and more than historical retrospect. They need to know what to expect in the future. The other member of our panel, then, will address himself to the application of this type of analysis to the needs of the economic world in which we live.

By JAMES C. DOWNS, JR.*

THERE is always some embarrassment in a practitioner discussing the need for his practice. To a degree that is what I am doing when I make a statement on "The Need for Measured Demand in the Housing Market." Early in the year 1931 the need for such market information had become sufficiently clear to me that I formed Real Estate Research Corporation for the purpose of supplying such data on a commercial basis. This need, then, became in itself the market for the operations of our company.

At the outset of these remarks I might say that in the entire housing field the "need" has always been greater than the ability to consume, principally because of a deficiency in purchasing power. In the area of market data the "need" has also been greater than the demand—not because of insufficient purchasing power, but because of a failure on the part of those in need to recognize the practical value of sound information. Gradually, and with increased momentum, the past few years have seen a broader recognition of this need, although a large percentage of potential beneficiaries has not yet developed a sufficient "awareness" of the need to have taken any action in its satisfaction.

The most obvious need for accurate information on the housing market centers about the broad industry which is concerned primarily with creating housing supply. This includes fabricators of material, their dealers and distributors. It embraces builders of all types, prefabricators, labor unions and land developers—all of whose current operating schedules and future plans must of necessity be related to the constantly changing effective demand for new housing. Whereas it is not possible to forecast the demand for new building in a profit-based economy by the relationship between the number of consumers and the quantitative housing supply, there is some ability to measure other factors which may serve as guides to the industry.

In addition to those engaged directly in the production of building materials, the fabrication of those materials, and in the supplying of labor therefor, there are many collateral activities which are in need of housing market demand data. Prominent among this group are savings and loan institutions, insurance companies, savings banks and other financial agencies who are constantly required to forecast values over a period of years and who, therefore, need estimates of current and future markets. The present unsettled situation in mortgage financing is due in part at least to an anxiety on the part of lending agencies over their inability to accurately measure demand.

Another great area of need for housing market data is to be found in general industry, especially in connection with plant location. It is vital to any industrial corporation to be able to analyze a prospective location from the point of view of adequate housing for its employees. There are countless instances in the nation today wherein employees are impossible to recruit because of the inability of the communities in which such plants are located to provide housing for required personnel. There are far more instances in which new plants could be secured by communities if there were sufficient housing market data available to prove to prospective employers that their personnel could be accommodated.

Adequate housing market data are also sorely needed by many government agencies whose operations and planning

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are directly influenced by the state of the housing market. Housing Authorities, for example, are fundamentally concerned with the state of the housing market in the communities which they serve. Land Clearance Commissions and other agencies involved in urban rehabilitation are faced with problems of relocation which can be solved only if the agencies are in possession of sound housing market analyses. Highway Departments are constantly faced with the problem of housing market data both from the point of view of land acquisition and of planning to provide highways for those areas in which the greatest residential growth is anticipated.

School boards, facing the requirement of meeting the demands of growing areas and of curtailing activities in shrinking areas, are constantly in need of data on the shift in the housing market within communities. All types of utilities—both public and private—are always in need of similar data. Many utility companies operate departments whose primary objective is the forecasting of housing trends. Tax assessors, police and fire departments and city plan commissions are concerned with such housing data for current as well as future operations.

I have been asked to comment on the need for market forecasts and the difficulties involved in making such forecasts. In all of the cases mentioned above the need is divided as between current data and forecasts, with the greatest need being for forecasts. The difficulties in such forecasts are complicated by the fact that the effective demand for housing fluctuates rapidly and widely within the framework of the actual demand as related to supply. For example: if a community has 30,000 family units and 29,000 housing units, one might ordinarily conclude that a state of shortage would exist until either an additional 1,000 housing units would be built or until 1,000 families would move from the community. However, a drop of 20% in employment levels within six months might produce a vacancy of 500 units without any change in either the number of families or the number of housing units. For that reason forecasting a housing market—in communities wherein the number of families and the number of housing units have been measured—is almost entirely a matter of general business forecasting with special emphasis on employment levels and wage rates.

By HOWARD G. BRUNSMAN*

BEFORE getting into the discussion of this subject I should like to define, or perhaps to define anew, some terms. The Census Bureau has found a certain amount of confusion as to what is meant by household and family, so they have proposed some definitions which I would like to present.

First, the *household* (as defined by the Census Bureau) consists of a group of persons occupying a dwelling unit and includes all related and unrelated people who occupy the dwelling unit. Therefore we find that the number of households is exactly related to the number of occupied dwelling units. Thus the measure of the number of occupied dwelling units can be a measure of housing demand. They are the units now occupied and they give no measure of potential increase.

The second term to be defined is *families*. According to the Census Bureau, a family represents a group of two or more persons living together. A house-

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hold may contain two or more families. If there is a couple living as lodgers in a private household, that couple represents a separate family. If the household head has his wife and children living with him, he and that group also represent a separate family. Thus, there can be two families within one household; but conversely, if there is a dwelling unit occupied entirely by one person, that person does not represent a family. There must be two or more people to call it a family, according to this revised concept.

The third term to be defined is the *sub-family.* A sub-family is a married couple with or without children living with relatives in a dwelling unit and they must be related to the household head. If the son of the household and his wife with or without children are living in a dwelling unit, that son and his wife and children represent a sub-family. In like manner, one parent with one child, living in a household and related to the household head, is a sub-family. Sub-families are members of the primary families within households.

It is assumed that the estimated demand of housing can be obtained from the figures on total population and the average population of a dwelling. That is certainly not the case. There may be some relationship between total population and the effective demand for dwelling units, but it is not a direct and simple one. There is probably a closer relationship between the number of married couples and the demand for dwelling units, but I would like to quote a few figures from a survey we conducted in April 1947 to indicate that even that is not too close a relationship. In April 1947 we found 70½ million married persons in the United States. This would represent 35¼ million married couples: 1¾ million of these couples were not living together, and, of those 33½ million married couples who were living together, 30½ million were heads of separate households, leaving 3 million married couples living together but not heading a separate household. They were either secondary families within a household or they were living as lodgers in a hotel or living as a sub-family, and did not head a separate family of their own.

Starting with the same figures for April 1947 we found something more than 39 million households in total, and again we have 30½ million married couples, 3 million persons living entirely alone; 1⅓ million representing a parent and minor child group; and 4⅓ million heading other household groups of two or more persons.

In addition to these 39 million households we had ¾ million parent-child sub-families where a parent and minor child lived in a household which they do not head up; 100,000 parent-child secondary families, and another 100,000 other secondary families.

Thus you see you had a total of more than 40,000,000 groups of this type, household groups, and in addition there were 4,000,000 individuals living as lodgers either in hotels, rooming houses or other such places.

I have quoted those figures primarily to demonstrate that there is not a close relationship between the married couples, the 35¼ million married couples, and the 39 million households in the United States. A comparison of the figures for April 1947 with those for April 1940 indicates not only that the relationship is not close, but changes were constant. The housing shortage of 1947 probably resulted at least as much, if not more, from the flexibility of the demand for housing rather than in an increase in the number of married couples alone. It is true there were more married people in the United

States in 1947 than in 1940 but that alone is not sufficient to explain the change in housing demand. There is an element of flexibility and it is the income factor. Unfortunately, we do not have accurate, current measures of changes in these various factors. I have demonstrated that there is not a constant relationship but, even so, it is desirable to follow the trend in number of married couples. In family formation, too, we have no accurate, current figures on the changes in those factors.

The Census Bureau has conducted surveys, one from which I quoted figures, in April 1947. That gave us a relatively accurate measure of the change from 1940, but our present survey technique is not adequate to give us measures year by year of the changes in the number of households or in the number of families.

In spite of these limitations in the data it is still desirable to follow figures available on trends in population groups, figures on marriages, divorces, death rates, and birth rates; but they are simply straws in the wind, and not indicators of what is current, and they cannot be taken as the absolute figures for the effective demand for housing. The problem is even more complicated if you are attempting to analyze a local area rather than the United States as a whole, because the figures become even less satisfactory or less extensive for a city than for the United States in total.

By DONALD S. THOMPSON*

IN dealing with the influence of purchasing power on effective demand for housing I shall attempt to outline briefly some of the items we in finance look at or guess at when we are trying to appraise the outlook for real demand for housing in the market as it exists. I say "guess at" because that is what we actually do when we are trying to figure what lies ahead. In attempting to measure the influence of changes in purchasing power or effective demand for housing we have to "guess" at some of our basic data and certainly we have to guess at relationships. To paraphrase what Dr. Fisher has said, not only we do not know the shapes of the curves but also frequently we do not even know the location of any of the points on the curve or to which the curve must be fitted.

Effective demand exists for two types of housing, rental housing and housing which is occupied by the owner.

In rental housing we assume generally that the chief factors affecting buying power or demand are changes in incomes and in rents. With respect to home ownership, we have other factors which are also important. The discussion which follows will be restricted chiefly though not wholly to the demand for owner-occupied housing.

The problem of analyzing purchasing power and effective demand for housing becomes clearer if we first review developments of 1946 and 1947. During those two years, between 5 and 6 million homes in urban and rural nonfarm communities are estimated to have been bought by people in this country. Of these homes less than 1½ million were newly-built structures; the remainder were dwelling units already in existence and previously owned by someone else. The aggregate purchase price of these homes is estimated at about $30 billion.

How were these 5 or 6 million buying units able to command that much buying power? The sources of funds are indicated by the following estimates:

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Total amount paid	$30.0 billion
Funds obtained from:	
Liquid assets	6.0
Liquidation of real estate and other assets	7.5
Current income	1.5
Mortgage loans	14.0-16.0

These data represent only rough approximations but they are probably close enough to illustrate the nature of the magnitudes and proportions with which we have to deal.

At least four factors affect buying power: First, of course, is the income of the demanding unit. Second is the general character of the expenditure pattern of that unit which permits it to expend what it does spend on housing. Third is the amount of savings that that demanding unit has. Fourth is the amount of credit that the unit can command at any time it wishes to exercise its demand for housing.

Income and Pattern of Expenditure

As one of the speakers this morning remarked: Some families prefer to live in one room and put their money into a television unit, and others are content with meager housing in order to have an automobile. So, the standard of living of a particular family and the way in which they would spend their money has an important influence on demand.

We assume, and the available data support our assumptions somewhat, that changes in income and changes in distribution of income have marked effects on the demand for housing. The data at our disposal, however, reveal conflicting trends, and the relationships are by no means clear. We believe that the pattern of expenditure of family units, or demanding units or however you wish to describe them, differ as the level of income changes. A general increase in incomes such as we have had in recent years results in a general upward shift of the whole distribution curve; everybody gets substantially increased income. As a consequence, people tend to remain more or less in the same group as before even though the arithmetic descriptions of the groups containing most of the people change. The effect of that kind of increase in income on an individual's or family's expenditure pattern may be assumed to be different from the the effect of an increase in income which moves an individual or family from one income class to another while most of the people remain in their original income classes.

To put it a little more concretely, FHA figures show that families with higher income devote a smaller part of their income to housing than do families with smaller income. The surveys of consumer expenditure of the Bureau of Medical Statistics also reveal that tendency. FHA figures also show, however, that over the period from prewar to postwar, as incomes have increased, the proportion of income expended on housing at a given income level has increased. In other words, a family with $3,000 income today spends a much higher proportion of its income on housing than did a family with $3,000 income in the prewar period. Does that mean that the pattern of expenditure has changed at given income levels or does it merely mean that the $3,000 families of today are the $1,500 to $2,000 families of yesterday, and that they are still spending their money on a $2,000 basis at $3,000 prices?

A shift in distribution of income resulting from a general inflation in incomes apparently has a different effect on the demand for housing than does a shift resulting from the growing economic maturity and prosperity of families. At least that is what we believe. Our data are not sufficient to substantiate such a belief but neither do they deny the inference. It would be extremely useful to

know more about changes in distribution of income and how they affect the expenditure patterns of consumers and their willingness or ability to buy housing, whether in the form of owned residences or in the form of rented quarters.

Here is a fruitful field for research. In the Federal Reserve System we have attempted through our surveys of consumers' finances to assemble data which will throw light on this question. However, some of us are doubtful that we will have adequate data soon enough to be able to anticipate the character of developments which will presage, accompany and characterize the next crisis in real estate.

I am not thereby forecasting that a crisis in the conventional sense is coming soon; I am merely saying that, while we are trying to get better data through our consumer finance surveys than we have had before, some of us are skeptical that we will get it in time to be able to anticipate and understand, from the viewpoint of public policy, what will happen.

It is important to understand what happens to expenditure patterns when incomes change. If we had known more about the effect of income changes on expenditure patterns, savings, and on availability of credit, and of the combined effects of those three factors on the demand for housing, some of our postwar policies might have been different. It appears in retrospect that public policy was based on a misconception or at least lack of understanding of the extent to which the increase in effective demand for housing had outstripped the relative growth of income and the ability of the construction industry to produce homes.

Savings

As indicated earlier, about one-fifth of the amount spent in the purchase of homes in 1946 and 1947 came out of savings in the form of liquid assets. The increase in effective demand, therefore, reflected in part the wartime growth of savings which in turn was a result of rapid increases in income or buying power not used previously.

We came out of the war with enormous backlogs of savings. Holdings of liquid assets—currency, demand deposits, time deposits, savings and loan shares and U. S. Government securities—by individuals increased from about $50 billion prewar to nearly $150 billion at the close of the war. These savings furthermore appeared to be more widely distributed than before in our history. More people than heretofore had the necessary amount of savings available to put into a down payment on a house. The houses were not there and inflationary forces in the real estate market were strengthened.

Credit

Approximately half of the purchasing power for housing in 1946 and 1947 was obtained by borrowing. Mortgage loans increased more rapidly than in any comparable period for which we have reliable estimates. At a time when buying power was already excessive in terms of supply of housing, that buying power was increased by expansion and liberalization of credit facilities. Guarantees were provided, a secondary market created, maturities were extended, interest rates were lowered, loan ratios increased and appraisals "liberalized." The result permitted the capitalization into higher and higher real estate values of incomes which were in themselves also increasing.

Need for Research

In my analysis of postwar developments I do not wish to imply criticism of our policy officials even though I disagree with some of their policies.

Public policy was established in the

Congress and in administrative branches of government as a result of pressures exerted by the people.

People in public office did not have adequate factual grounds for resisting the pressures to which they were subjected or for demonstrating to the pressure groups the defects of their proposals. The pressures resulted in our making special credit facilities available to large portions of our population so that the effective buying power was increased enormously and inflationary pressures were increased. As a consequence we have experienced what I choose to call the worst real estate boom in history. Economists and technical advisers were so slow on the job that they were not able to provide effectively the information and counsel needed by the determinators of the policy. We did not know, except in a very general way, and we do not know today the extent to which increases in credit affect demand for housing.

We had millions of veterans coming back and had no housing for them; something had to be done. What we did was to attempt to balance their disadvantages as against the advantages of those who stayed at home by giving them in effect a backlog of savings through the G.I. Guarantee. This enabled veterans to compete with those who had been able to accumulate savings during the war. We increased enormously the demand for housing, and consequently, the prices at which the current supply was transferred. As economists, we were unable to present to those who had to determine public policy evidence in sufficiently convincing form to persuade them that the policy would produce inflation rather than additional housing. Criticism of the policy, therefore, in my opinion, lies squarely in the laps of the economists and others who are concerned with housing markets. More research and more understanding of market developments is drastically needed.

I had hoped that Dr. Ernest Fisher would feel that he had carried some of his studies of developments in the markets in recent years to a point sufficient to permit him to make some observations on the effect of changes in credit terms on prices.

Another place where we need research is on the techniques of the mortgage credit market—the way in which funds flow into the real estate market and the way in which they flow out, the way in which the changes take place in credit arrangements. We need also to study attitudes—I am not speaking in subjective terms but of attitudes as revealed in statistical data and in the characteristics of loans approved and turned down—the attitudes of renters and borrowers, which presage and accompany changes in the real estate situation.

What happens in a real estate boom? How do credit arrangements change? What are the characteristics of the changes in flow of credit into and out of the market? We know little about these matters. Today public policy is being established in the field of real estate credit, and credit controls are being proposed or established on the basis of assumptions which we hope are fairly reasonable, but on evidence that is not wholly convincing, and certainly not indisputable.

By ARTHUR M. WEIMER*

THE principle of elasticity of demand is a generally recognized economic concept. Elasticity usually is measured by relative change in quantity divided by correspondingly relative change in price.[1]

* Dean, School of Business, Indiana University.

[1] George J. Stigler, *The Theory of Price* (New York: The Macmillan Company, 1947), p. 52.

If the quantity taken from the market varies so directly with price changes that price times quantity always produces the same total, demand is said to be unitary. If the quantity taken increases or decreases relatively more than a change in price, demand is elastic; if less, demand is inelastic. In the former case the demand curve is flatter than for unitary elasticity, in the latter case it is steeper. The elasticity of demand for housing offers a number of research possibilities but numerous difficulties are involved.

(1) The term "housing" itself is far from precise. Just what is involved in it? Is it space, amenities, social prestige, or a combination of these and other things? Should houses and house services be differentiated? Is housing in an elite neighborhood the same type of commodity as a flat in a slum?

(2) The consumer occupies various relationships to housing. He may be a tenant, an owner who lives in his house, or an owner who rents housing to secure returns on his investment, to mention a few of the possible relationships. The same person may occupy several of these relationships to housing simultaneously or move from one to another. The shift from tenant to owner status may be of vital importance in studying the elasticity of demand for housing.

(3) The measurement of "quantity of housing" in relation to price changes requires not only a relatively precise definition of "quantity of housing" but also of "price," "rent," their components, and the relationships between them. For example, are price changes or anticipated price changes of greatest importance in determining the elasticity of demand for housing? Probably the real question in this instance is not what will happen if consumers anticipate price changes but how the anticipations are formed.[2]

[2] *Ibid.*, p. 95.

(4) Techniques of measurement as well as definitions are required. Is research to be accomplished through statistical studies, case studies, theoretical studies or in other ways? The development of appropriate definitions and techniques of measurement are in themselves significant research projects.

(5) While the concept of elasticity of demand for housing as outlined above is relatively simple, it leads to rather involved theoretical problems.

Because of the importance of the theoretical framework of potential research projects dealing with the elasticity of demand for housing, some suggestions for guidance in future projects are outlined.

Traditional demand theory assumes that individuals or family heads know what their wants are and how they may best be satisfied. It assumes also that consumers will try to maximize the attainment of the ends they desire within the means available.

On the basis of these assumptions several quantitative relationships may be set up:

(1). Variations in the quantity of each commodity purchased as its price varies.
(2). Variations in the quantity purchased as the individual's income varies.
(3). Demand relationships between two or more commodities or services.[3]

While the assumptions and relationships outlined above are valid as general statements of tendencies, studies of the elasticity of demand for housing may involve a number of special considerations.

Houses are not purchased often. The consumer may become an expert in buying vegetables but seldom knows a great deal about house purchases. Thus, consumers of rental housing may operate more efficiently than consumers of owned housing.

[3] Adapted from George J. Stigler, *op. cit.*, p. 64.

Also, rental housing appears to be a somewhat different commodity from owned housing. Owned houses come in large economic units. The purchase of such houses usually involves other factors than housing or the individual consumer's preferences. Preferences of family members, in-laws and friends may weigh heavily. House A plus the good will of in-laws may be preferred to a "better" House B and their ill-will.

Each want-satisfaction tends to lead to a new want. Allowances must be made for exploratory activity on the part of house buyers or renters.[4] For example, few people seem to be satisfied for very long with the houses they buy or build.

Allowance must be made for habit and inertia. People balance the problem as well as the cost of moving against acquiring "better" housing for the same outlay.

Complementary and substitute commodities must be considered in studying the elasticity of demand for housing. If mortgage interest rates rise or fall, even though house prices and rents are stable, demands will be affected. The same thing will result if there are changes in the prices of house furnishings, equipment or building materials, or if there are changes in the wages of the building trades and the like.

Studies of the elasticity of demand for housing would thus appear to lead to studies of cross elasticity of demand. For example, there are questions regarding the extent to which automobiles, movies and vacations are in some degree substitutes for housing. With respect to substitute commodities or services it should be noted that those things have highest elasticity for which substitutes are most easily obtained.

Thus, it appears that studies of the demand for housing cannot be separated from studies of the demand for the other goods and services for which the consumer spends his income. This leads to studies of "indifference curves" which represent such combinations of commodities that the consumer is indifferent between them.

Incomes are a vital factor in studying the elasticity of demand for housing, as has already been indicated. While there do not appear to be universal relationships between incomes and expenditures for housing and other things, there seems to be some relationships between incomes and demand elasticities. Some studies in this area have been made, many related to "Engel's laws." Additional studies are needed. Such factors as the following deserve consideration: (a) the relative size and permanence of income changes: (b) the relation of income changes to other incomes and to the general price level; and (c) rapidity of changes in consumption patterns when incomes change. For example, it would seem that sudden and substantial income advances are more likely to be spent for houses, other durable goods or the repayment of debts than are gradual additions to income.

Thus, studies are needed of "expenditure curves," or the quantity of housing, or house services and other things that may be purchased at various incomes. (To distinguish between demand and expenditure curves it should be noted that a demand curve represents the quantity of a commodity that will be purchased at various prices, incomes being held constant.)

Mention should be made also of the problem of elasticity of demand through time. The durability of houses, habit, inertia and slowness of consumer adjustment may be of major importance in this this case. Over sufficiently long periods technological changes also may have a bearing.

[4] See, F. H. Knight, *The Ethics of Competition* (New York: Harper & Bros., 1935), p. 22.

If the demand for housing is found to be highly inelastic in short-run periods, this factor coupled with an inelastic supply of housing in the short run may be of major significance in explaining the rapidity with which the "bottom drops out" of the housing market at times. In general, demand elasticity appears to be relatively greater over long than over short periods.

While a number of problems pertaining to the general framework of demand theory have been outlined, there appears to be wide latitude for research in the elasticity of demand for housing within this framework.

However, the doctrines of imperfect competition may also offer some suggestions for research projects in this area. In imperfect competition there may be few independent producers or the products of one firm may be differentiated from others in the eyes of consumers.

Since each housing unit is to some extent unique, there are some limitations on competition. Yet one could hardly contend that each housing unit possessed monopoly characteristics because the degree of substitutions is rather wide.

There are some monopoly elements in certain areas of the housing market, however, since certain groups such as the negroes are limited in the extent and type of their purchases. In such areas the elasticity of demand may be quite different from those in which more complete competition prevails. Similarly, exclusive subdivisions are differentiated in the eyes of consumers from "housing in general." A "good address" contains certain monopoly elements.

The housing market appears to be relatively free from the monopolistic effects of advertising, although they are found to some extent in the case of some house equipment and furnishings. Also, there are monopolistic practices in the establishment of wage rates in the building trades, in connection with many building codes and in some cases control of interest rates through government or private activity. All of these factors complicate the problem of studying the elasticity of demand for housing.

Despite the difficulties involved, such studies would have many uses. Two examples may be cited. First, such studies should help to improve local housing market analyses. Because of the relatively inflexible supply of housing at any one time and the impossibility of adding to it substantially in a short period of time, demand factors appear to be of major importance in housing market analyses which have for their main purpose the prediction of short-run market changes. Increased information about the elasticity of demand for housing should aid greatly in improving such analyses. In addition, of course, such information would be helpful in connection with longer range housing market analyses and predictions.

Such studies might also help to throw light on the demand for various materials used in house construction, equipment used in housing units, and the demand for equity and debt capital with which to finance housing developments.[5]

Second, studies of the elasticity of demand for housing should be especially helpful also as guides to future government policies pertaining to the housing market, particularly in such areas as rent control. Much might be learned now by comparative studies of housing units under rent control and those not so controlled. It might be possible to determine the extent to which houses under rent control are used less intensively than are others. Similarly, comparative studies

[5] See, for example, Homer Jones, "The Flow of Savings" (Washington, D. C.: C.E.D mimeographed pamphlet, 1948).

of the budgets of families living in rent-controlled housing and those in other housing might be very enlightening.

Indeed, any studies would be valuable which would add to our knowledge of the private and public ways whereby market competition could be made more effective in solving such problems as allocating the supply of housing facilities available at any one time and bringing additional housing units into the market. Such studies might at least prevent such follies as enacting rent controls without making provision for space rationing or pursuing similar policies which do not conform to the realities of economic life.

Abstract of Floor Discussion

on Measuring Effective Demand in the Housing Market

THE most significant factor in the measurement of effective demand in the housing market is the nature of that market. It has numerous peculiarities not characteristic of of markets for other goods. Especially to be noted is the fact that the real estate market is not one, but many, inter-related markets. The obvious and concealed relationships among these "many" markets involved in housing makes it a unique subject for study.

Some of the less well explored research areas associated with the housing market are very complex in nature. For example, the matter of relative price in the expenditure pattern requires knowledge of several different markets and their relationships. The related factor of personal preferences regarding expenditures in the various markets involved is yet to be fully investigated.

Very little information is at hand regarding changes in prices as they are conditioned by changes in income levels at different periods in business cycles. This constitutes an area of high priority for the purpose of understanding the housing market.

Equally complex is the determination of trends and the accumulation of representative data regarding the supply of mortgage money and its effect upon the housing market, particularly with reference to demand patterns, interest rates, and so on.

In addition to such typical economic aspects of the housing market, too little is known about social factors which affect housing demand. For example, the role of boom psychology in the housing market is still to be definitely examined.

It is clear from the complexity of these and similar research areas focusing on the housing market that collaborative as well as individual research may be needed to achieve helpful answers to the questions they pose. On the one hand, it is necessary that every aspect of the housing market be subjected to further study. On the other hand, successful coordination of these individual research projects is prerequisite to advancement of knowledge about the market as a whole. The suggestion is made, therefore, that some coordinating body be established for the purpose of breaking up the study of the housing market into segments which can be managed by individuals or small teams, to be accompanied by sustained over-all direction and fitting of the segments into a whole, with a final assembly of the segments into a composite dealing with the entire subject in perspective. Such a program of research, of course, must be expected to extend over a considerable period of time and to involve numerous specialists.

Panel IV

Housing Needs and Housing Standards

Chairman: Nicholas Demerath, Professor of Sociology, University of North Carolina.

Panel: A. Benjamin Handler, Housing Economist, Washington, D. C.; Frederic A. Gutheim, New York *Herald Tribune*, New York; G. Holmes Perkins, Chairman, Department of Regional Planning, Harvard University; Abner D. Silverman, Director of Management, American Community Builders, Inc., Chicago.

Chairman: NICHOLAS DEMERATH*

IT is proper that we conclude this Symposium with this panel on "Housing Needs and Housing Standards." They appear to be fundamental elements in the housing picture. We found the neighborhood a slippery subject yesterday afternoon. It was, I think, largely the vagueness and ambiguity of needs in respect to neighboring and the physical neighborhood which made it so elusive.

Needs and standards lie at the heart of much of our earlier session on the relationship of technological and social research. Problems for scientific investigation were raised which got down to fundamentals, to questions of needs and standards. The immediately preceding consideration of effective demand in the housing market found the chemists recognizing needs at once as the stuff out of which demand is made. Excluding by definition, and excluding quite legitimately, the matters of need, the economists go about their descriptions and analyses of market phenomenon but wise economists know the importance of needs, though they may elect to stick to the least discouraging problems of demand analysis.

Our panel is venturing into a very dark continent—this continent of needs and standards: and we hope you have your sun lamps and continental equipment with you. You will probably need it before we are through. But be that as it may, our panel is certainly not going to hand down—and no one of you, unless I am very surprised—will hand down the last word on needs or standards. Quite the contrary.

I think, however, all of us might seek to understand the importance of scientific research and of an orderly approach in understanding housing needs and housing standards. Persons and groups of persons everywhere have certain life requirements, which they attempt to satisfy by means of housing. These requirements we may term housing needs. Housing, in turn, tends to meet these needs in various ways. It reflects and affects needs. Thus, we observe that the various functions of housing always adhere to adjusting the needs in one way or another. Needs may be experienced subjectively as desires of concrete personalities or they may be imputed to people by would-be benefactors who say that So-and-So needs more space, better sanitation, a new house, etc., but So-and-So does not know it. "I know it." Thus we refer to experienced needs and imputed needs, for discrimination, and with great confusion!

The subject of standards is equally chaotic. We evaluate housing as good or bad, standard, sub-standard, satisfactory or unsatisfactory, according to standards of various sources. For in-

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stance, they all refer ultimately to some conception of the adjustment between person and group needs and housing function. A standard is a specification of a condition actual or projected that is held to be desirable and satisfactory according to somebody's value system. It may be derived scientifically or by sleight of hand. It may come out of factual investigation or it may come via the route of Cosmo. It may imply a widely-held value, or at the other extreme, a highly restricted value. If we are not to display our ignorance and confusion with reference to standards, standards cannot be considered apart from needs. To ask what we know and don't know, what we should know and how we may learn about needs and standards and to mention certain illustrative problems for research by all kinds of social scientists, sociologists and people who are concerned with practical action programs in the housing and planning fields, to do these things we will turn to the panel contributors for discussion.

We turn first to the presentation of Mr. Handler, as a bridge maker: that is, a builder of a bridge between our earlier discussion of effective demand in the housing market and our present exploration in a dark continent with people who have various and sundry curves and other languages.

By A. BENJAMIN HANDLER, JR.*

DISCUSSIONS on housing have not been distinguished for their clarity of thought about the relation and difference between housing needs and standards on the one hand and the demand for housing or forecasts thereof on the other. The tendency has been to neglect the problem, gloss over it with a few verbalisms, or to remain innocently unaware which concept is under consideration. Demand is constantly being treated as though it were need, and need as though it were demand. Occasionally some sober individual, who is not also an acrobat, tries to ride both horses simultaneously.

Not so very long ago economists refused to recognize need. It was a concept unknown to the orthodox canons of economic thought, and consequently had neither meaning nor connotation. What people were able and willing to pay for came under the category of demand. Beyond that, who could say what they needed? The notion of need was to them purely subjective, incapable of scientific demonstration, and hence of no validity whatever. With the peculiar myopia characteristic of the positivist mode of thought, they refused to recognize the existence of anything but "hard facts." Ethical considerations, being entirely outside the market place, simply did not exist for the economist as such.

Those economists who approached the problem of housing needs did so gingerly through the "hard fact" of population. Recognizing that in the long run the increase in housing followed increase in population, they forecast the demand for housing on the basis of population estimates. This they equated with need. The demand for housing would follow population growth and, as population grew, more housing would be needed. This confusion of need with demand made the former perfectly recognizable to economists. It was now based on objective facts, and capable of scientific validation.

The reason that need could so easily be confused with demand is because it was

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conceived in purely quantitative terms. Deprived of its subjective qualitative curse, the notion was free to acquire a content which could be measured, related to other quantities, and determined. Actually this amalgamated demand-need concept was a hybrid, which was neither demand nor need. It was not demand, which is never a function of population growth and nothing else. At any given time the demand for housing may have little relation to the change in population. Nor was the concept one of need. Defining it in purely quantitative terms had emasculated the essential qualitative character of need. Excavating enough caves, erecting enough tents, or building enough weathertight dwellings for the increase in population would not fulfill need. Certain standards must be met. Need can never be considered in purely quantitative terms. Quality is an essential aspect of the concept.

As might be expected, therefore, economists have paid little attention to housing needs and standards. A division of labor has occurred, with sociologists, professional housers and students of housing taking over this subject and economists confining themselves to the demand aspects of housing. The two concepts tend in general to be regarded as separate and distinct, not so much because of serious reflection about the matter but rather because different people deal with each. Nevertheless, the two groups have this in common: one regards needs and standards, and the other regards demand as firmly grounded in hard facts. Using their analytical and statistical tools, economists have found the demand for housing to be based on such factors as income and price or the relationship between the two. Sociologists and others have been basing needs and standards on objective scientific studies of the requirements of the human body and the human psyche. Current thinking, therefore, on the relation between the two concepts, needs and standards on the one hand and demand on the other, rests on three propositions: (a) the two are separate and distinct; (b) each is capable of scientific determination; (c) each is determined by different forces. Let us examine each of these in turn.

(a) The concepts, *needs and standards*, and *demand* are separate and distinct. It is true that the concept of need must be rigidly distinguished from the notion of demand. The public is fundamentally correct when it thinks of housing needs and standards as being the province of the zealot, and forecasting the demand for housing as the domain of the soothsayer. The one, fighting in the cause of righteousness, appears to have no point of contact with the other who foretells the future from the vantage point of an aloof spectator. The first is concerned with ethical norms or what we ought to have in the way of housing, the second with what is likely to happen or what people will demand in the way of housing.

Economic demand must be distinguished from demands (whether economic, social, political, or any other kind). People may make demands, but that does not mean that these will be met. Demands are normative in character, being based on what people think they ought to have. Demands that Congress pass the TEW bill, for instance, are grounded in a conception of housing needs and standards, that is to say, in a notion of what kind of housing there ought to be. The term demand as used in economics has quite a different meaning. The adjective "effective" is always assumed to precede it. Thus, whereas housing needs and standards and any demands resulting from them are based on a concept of human welfare, housing demand (as already indicated) depends

upon price, income and other so-called hard facts.

Needs and standards, then, are teleological or purposive, based on human goals and aspirations. Demand, on the other hand, is the result not of conscious human effort but of the blind interplay of impersonal forces. They belong to different realms of discourse, one in the world of values, the other in the world of facts. Social scientists have found that the failure to distinguish between ethical and factual propositions has resulted in intellectual confusion. This is the basis of the loose thinking about the relation between needs and standards, and demand. Does this mean that only demand can be treated scientifically?

This brings us to the second proposition: (b) The concepts, *needs and standards* and *demand*, are each capable of scientific determination.

It is generally felt that one is less scientific than the other. Statements of housing needs and standards are seldom as acceptable as forecasts of housing demand. The economist is regarded as a kind of oracle who has been initiated into the scientific mysteries. Where the layman challenges his utterances it is not on the basis of the layman's own knowledge. What he does is set oracle against oracle. But a statement of housing needs is regarded as fair game for all, with few critics hesitating to make their own statement. The most fundamental ground for disagreement is about ethical presuppositions. Such disagreement is not about the state of our knowledge or the need for allocating scarce resources, but about the ultimate goal. It is usually expressed somewhat as follows: "People aren't entitled to that kind of pampering." "Why house those who can't afford it better than those who can?" Frequently the argument: "The country can't afford it," reflects a disagreement with the goal.

In this kind of context it seems futile to regard needs and standards as capable of scientific determination. But let us not forget such statements as the well known housing standards of the American Public Health Association. These are based on studies of the requirements of the human body and the human psyche for the maintenance of health. Standards of this sort and needs flowing from them are based on objective facts exactly as are forecasts of housing demand. Both are conclusions drawn from an analysis of the relevant data. Both are based on a system of objective relationships. Both show what follows from stated conditions. Thus forecasts of housing demand are what is implied in the way of housing under certain hypotheses as to income, price and the like; and statements of needs and standards are what is implied in the way of housing under certain hypotheses regarding human welfare. In each instance, the correct application of sufficient knowledge enables the conclusions to follow from the assumptions.

It matters little that forecasts of housing demand tell what is likely to happen under stated or implicit conditions, while standards and needs are means for the attainment of implied or explicit ends. In each case the conclusions can be reached scientifically. The needs and standards are capable of possessing validity for the assumed end, just as is the forecast of demand for the assumed conditions.

On the face of it, this seems to contradict the statement that needs and standards are ethical concepts. For how can a value judgment be scientific? The answer is: to the extent to which it is a value judgment it is not scientific, but it is scientific in so far as it is a statement about valid means for the attainment of a given

result. It is the acceptance of a goal which makes a statement of needs and standards different from a forecast of demand. Although the content of each concept is arrived at scientifically, that does not prevent them from being in different realms of discourse. Needs and standards always remain notions on what *ought to be* regardless of how scientifically determined. Forecasts of demand, when scientifically determined, are never statements of *what ought to be.*

Failure to distinguish between facts and values implies that needs and standards are predetermined in the same way as is demand, by the interaction of blind impersonal forces. It imparts inevitability to values by, in effect, denying that they are values. It is illusory to regard human ends as flowing automatically from man's physical and psychological nature. For the kind of nature with which man is clothed is either consciously or unconsciously tailored to suit the value system of the tailor. The American Public Health Association's housing standards follow from human requirements only because the latter are considered in terms of the stated goal, namely "basic health needs."

Deriving value judgments from the nature of man is by no means new in the history of human thought. In practice it has generally provided a pseudo-scientific cloak for a predetermined ethos. It received its characteristic form in the well-known social contract theory of the basis of political obligation current in the 17th and 18th centuries. This theory derived its justification of political authority and obedience from a view of human nature based on the latest scientific knowledge. The objectives of the theorists, however, predetermined their view of human nature. Others with different objectives held quite opposite views of human nature.

Any argument which bases housing needs and standards on human physical and psychological nature, is exactly the same. In purporting to derive values from facts, it really is trying to deny the normative character of needs and standards, when actually they are inconceivable apart from a stated or implied goal.

That a statement of needs and standards is scientifically arrived at is no reason for denying that it is a value judgment. Any number of alternative or conflicting goals may be set up, each requiring different means, i.e., needs and standards. All of the latter can be scientific. Yet we cannot accept them all simultaneously. Nevertheless, such acceptance is precisely what we may logically be led to if we attempt to deny the essential ethical character of needs and standards.

We now come to the third proposition upon which current thinking about the relation between *demand* and *needs and standards* rests: (c) each is determined by different forces. Though the ideas of need and demand are separate and distinct, one in the universe of values and the other in the world of facts, the contents with which we fill the conceptual shells tend to be the same. The contents of both originate in the same time, place and circumstance and cannot help being identified with their surroundings. To say that every family needs a private bathroom is, of course, far different from saying every family will have a private bathroom. But the private bathroom is today present in our concept of need as well as of demand, whereas it was not present a century ago. It is thus in their contents that the two concepts impinge on one another.

Housing needs and standards are not immutable. Beyond the need for a bare minimum of protection against the elements, they change with changes in in-

dustrial efficiency, the development of new products and ways of doing things, the urban-rural configuration, customs and habits, income and standard of living. The housing standards of yesterday are now obsolete, and those of today will be outmoded 30 or 40 years hence. Luxuries have become necessities, and will continue to become so. The kind of housing we demand also changes with changes in the same factors. What we conceive to be our needs and what we demand are formed out of the same basic cloth. And changes in its warp and woof tend to be reflected in both. The difference is that such changes are translated into need faster than into demand. That is to say, the possibilities and implications for housing are recognized and become demands before fructifying into effective (i. e., actually realized) demand.

The kind of house and its setting envisaged in an analysis of needs and standards cannot be too far removed from what is in our mind's eye when we forecast demand. In the first place, both are limited by existing and foreseeable technical and other possibilities. In the second place, no statement of needs and standards which drifts too far away from actualities is generally acceptable. Thirdly, various forces in our society limit the demand for housing regarded as substandard.

The relationship between needs and standards on the one hand and demand on the other is via income and productivity. The demand for housing depends in large measure on the national income. This is largely a function of the efficiency or productivity of the economy. This in turn stems from the state of the industrial arts and their utilization. The state of the industrial arts also determines standards. It is the limiting possibility beyond which standards become utopian, and too far short of which they become unacceptable.

Long range forecasts depend primarily on assumptions regarding the development of the industrial arts (i.e., productivity). A concept of needs and standards is implicit in these assumptions. For these are the possibilities envisaged, and it is upon them that we must build our standards and needs. These standards and needs, of course, do not follow automatically from the assumed possibilities. It is first necessary to make explicit the possibilities implied in the assumptions. Then the transition has to be made from the possible to the desirable. But while needs and standards are thus being formulated, the industrial arts are developing further, and new possibilities are arising. The needs and standards implicit in the forecast become outmoded before the period of the forecast has arrived, while the old possibilities are still in process of being realized. Thus, needs and standards always outrun demand, except in the stationary state of the economist's analytical imagination.

Short range forecasts depend far more on assumptions about the degree of utilization of the industrial arts than about their development. (The time is too short for productivity to change significantly). For that reason, the implied standard is not so much inherent in the forecast as in the existing industrial techniques. It follows that there is no implied assumption in the forecast about need in the sense of a standard translated into concrete and quantitative terms for the whole population. But a notion of need in the sense of the difference between a standard thus treated and demand is very definitely implied in all short range forecasting. Both need in the latter sense, and demand, depend on the degree of industrial utilization. It must, however, be remembered that, while degree of indus-

trial utilization is probably paramount in short-range forecasting, it is always such utilization of the industrial arts in a certain definite stage of development.

Now forecasts of housing demand either foretell what is likely to happen, or indicate what is likely to happen under certain stated conditions. In the former the conditions are implied. The stated condition is usually full employment and a high national income. This postulates, of course, full utilization of our industrial and other resources. Hence housing demand will depend on the level of national income, individual productivity and the stage of industrial development (degree of industrial utilization not being applicable by reason of the full employment assumption).

Thus, because any forecast or estimate of future demand requires a postulate respecting productivity, for that very reason it automatically marks out an area within which any acceptable statement of needs and standards must stay. This is the only sense in which a conception of needs and standards is assumed in economic forecasting.

The position may be summed up as follows: Forecasting in the sense of what is likely to happen under conditions of full employment is a direct function of the development of industrial techniques, and the resulting income-producing and standard-of-living-possibilities of the economy. Forecasting in the sense of foretelling depends on these and also on the degree of resource utilization. Needs and standards, too, depend on the development of industrial techniques and on the acceptance of an ethical goal or concept of human welfare as well.

None of this denies the validity of the proposition that demand is based on income, and needs and standards on the requirements of the human physique and psyche. It merely goes a step further, and says that each of these seemingly independent variables depends on a more ultimate common factor, the state of the industrial arts. To say that housing needs and standards are based on man's physical and psychological nature does not in practice neglect basic technological forces. What human nature is deemed to require is always based on the latest technical knowledge. It is well to remember, moreover, that these technical forces determine needs and standards only in the sense of circumscribing the possibilities, not by rendering our choice inevitable. The choice depends on the goals we set for ourselves. Thereafter, the means are bound by technical limitations. Conservatives and radicals operating within the same technical possibilities do not generally choose the same needs and standards. Their goals are usually too far apart. But their choice of means is limited in that they have only the same technical possibilities from which to choose. How they utilize these possibilities depends upon their purpose. The choice of means, therefore, is predetermined by the state of the industrial arts only after the end has first been chosen.

I have tried to show what is the essential difference between the concepts of need and demand, what we mean when we regard needs and standards as capable of being scientific, and finally how needs and demands are related to each other by the same basic forces. The confusion of concepts is, I suspect, partly the result of sociologists and economists engaging in discreet approaches to housing problems. If they work together instead of just get together, the lack of clarity might soon become apparent. Similarly, the relation of the contents of the two concepts would probably also have to be faced. And if both sociologists and economists further widen their horizons, the nature and limits of scientific knowl-

edge about the whole subject of housing might be explored. As social scientists it is our duty to occasionally sharpen our tools on a broad whetstone. The subject of housing particularly requires it. By its very nature it cannot be confined to the artificial academic disciplines we have set up for ourselves. If it is to be practical in the real sense of the term, it cannot afford to concentrate on the imminently useful to the exclusion of either fundamental or broadly conceived analysis.

By FREDERIC GUTHEIM*

WE have considered how the environments of man, domestic, civic, and regional, can best be organized to augment and increase the potentialities of man. It is my assignment now to review our present status in the long effort to design a fit home, and to determine what steps should now be taken, and where our efforts can best be applied, to reach the objective of houses that best reflect and support desirable routines of modern family living and enhance its values. I will assume that this audience will not dispute the premise that close interrelationships exist between family living and the home. It is not necessary to review in any detail the ways in which good housing supports the family in its efforts to be healthy, happy, and efficient; to make the most of a limited budget and of limited hours together; to learn the basic arts of group living, and to develop the individual peronality. I can hardly improve that magnificent expression of Winston Churchill, "We make our buildings, and our buildings make us." But I cannot forbear adding that, in academic circles at least, more thought has been given to the effects of existing environments on men that to research that might provide enlightenment and help to those engaged in creating the new environments we need. And I will contend that the test we should bring to much of our research in housing and planning is whether it contributes in any significant measure to that reshaping of the environment I believe is necessary if men are to survive and families are to fulfill themselves.

A mass of information has been accumulated on the subject of houses and family living, much of it of recent date. We have uniquely in the United States the matchless statistical resources of the Census, the Bureau of Labor Statistics, and other armories of fact. We also have uniquely developed the opinion polls (and the sampling techniques) that have recently been applied by Miss Blanche Halbert and Miss Elizabeth Coit for the Public Housing Authority, and by *McCall's Magazine*, *Parent's Magazine*, the Curtis Publishing Company, and others. We have also the promising sociological techniques of investigation developed by Professors Chapin and Riemer that are now ready to be applied on a more extensive scale. These techniques stand ready to be augmented by analogous inquiries, specifically in the field of psychology.

Apart from this line of sociological inquiry we have an emerging contribution of the systematic anthropologists in the relation between the group and the individual, between man and his environment, and the application for our purposes of techniques of investigation already developed to aid comparative analysis and particularly the analysis of cultural configurations. Other sciences have much to yield that will aid our housing investigations, and few will doubt that their assistance will be welcomed. At the most rudimentary, we still lack an adequate history* of the

* *Herald Tribune*, New York.

American house. The architectural histories are wholly insufficient. Vogel's *Das Amerikanische Haus* published in 1910 is both inadequate and stale. The investigations of Albert Farwell Bemis were limited to the structure of the dwelling for the most part and were importantly conditioned by his thesis. In what history of the evolution of the modern American home which, as Dr. Giedion has recently reminded us, is so different from the contemporary European house, will one find, for example, any reference to the relatively recent advent of family meals? The colonial period was dominated by individual eating of meals from trays. Such perspectives, I conceive, are essential if we would understand either the relative unimportance of historical forms or the transitory nature of such institutions as family dining.

At a more complex level, we still lack a definitive statement of the relationship between an individual's health and the dwelling in which he lives—an analysis comparable, let us say, to the recent discoveries of the importance of the diet to general medicine and specifically to allergy. Much should be expected from other sciences, and our perspective must be generous as well as critical. I have two tests that may be applied to the literature from other fields that may be relevant to housing. First, is it positive? More and more I find myself less interested, for example, in housing and disease, and more interested in housing and health. I do not want to be told again that slums breed delinquency and crime; I want to know what kind of housing will most further integrated personalities and a healthy society. Second, does the investigator assume a static environment? So long as a fixed and immutable environment is assumed, little can be learned that will help in its reconstruction. At best a few fortunate people can avoid the worst environments, where a choice presents itself. In the fact that the environment does change lies our only justification for hope, and in the fact that the environment can be changed lies our supreme opportunity for action.

The data we have on the relation of family living and the home is already impressive, but it is by no means sufficient for our needs. It requires enlargement in both scope and type. I cannot believe that, were knowledge adequate to the affairs in hand, new housing of such poor quality would be built by public and private agencies and accepted with complacency by the public. The great deficiency is not alone in the lack of facts. It lies in our lack of suitable techniques, including a suitable philosophy, in drawing conclusions from the facts we have. We have not constructed enough bridges to connect the research side of housing with the design side. When one takes, for example, the recent ambitious and sincere effort of the National Conference on Family Life to survey this broad field and say where we stand, one must admit that little has been offered to scholarship and still less to the men who are making the new environment.

The traditional method of relating research in the effects of environments to the creation of new housing has been through the device of housing standards describing room sizes, equipment, light, ventilation, and other characteristics. From the first American housing standards to receive official endorsement—those drafted by Lawrence Veillier for the War Shipping Board's Housing Division in 1918—we have had a series of standards, better or worse, more or less substantial in their authority, and supported in varying degrees by official bodies. The Federal Housing Administration and the Public Housing Authority have their standards. So do some local

bodies. We have the recent formulation of the Committee on the Hygiene of Housing of the American Public Health Association, and we have the standards formulated in Great Britain and other nations. The desirability of having some standards cannot be questioned and, since the minimum soon becomes the maximum (as we have too often learned), the standards adopted must be high as possible. I have no desire to attack the desirability of housing standards, but I do wish to point out what is seldom appreciated; that standards as such cannot and in practice do not assure good housing. They are like any other form of examination that may eliminate mediocrity but cannot identify genius. To the question, "Are standards possible?" I would answer, "Up to a point only?" It cannot be reasonably contested that standards do not lead to good design, and there is a large body of testimony that indicates the designers themselves believe the standards have often presented good design. The recent change in the form in which standards are expressed by the Public Housing Authority is a recognition that this question is not viewed with complacency, but there has been too little experience since this change to demonstrate that the results of greater flexibility in expressing housing standards will now be found completely satisfactory. A measure of our skepticism here may be found in the analysis Miss Halbert has made of 1,000 families living in public housing projects, the survey conducted by by Miss Coit of families and housing managers in public housing projects, and the recent canvas of the Women's City Club of 400 families living in public housing projects in New York City. There is no evidence that families are wholly satisfied with present housing design. There is abundant evidence that we should do better in the future, and that we can do better.

In a paper of this sort I am hardly expected to spin a solution to these problems, but I should fail in my responsibilities if I did not indicate the steps I believe will lead to more realistic and more satisfactory design in housing. Part of this I have summarized, along with some of my more important reservations, in *Houses for Family Living*, but I would like to amplify some comments made there.

If we are to design proper houses, we cannot limit our consideration to the space within the four walls of the house. We must include the community and the neighborhood and indeed the city, for only to the extent that all the functions of family living are satisfied can they have what may be considered a satisfactory environment. All cannot be satisfied within the house, but the house must do its share. I have a particular interest in what I have elsewhere called "the tiny neighborhood" or the "cul-de-sac neighborhood"—a group of eight to twelve families who live in close proximity to each other and who are perforce neighbors in the classical sense. It is of such a group, I feel sure, that Professor Park was thinking in his famous observation, "The child is the best neighbor." I recently heard a psychologist lamenting changes in the American family, and the burden of his compaint was that when he was a child he could be spanked in a dozen houses in his block. That does seem about the maximum. In planning calculations, I believe this should be the smallest group. If we can think of the family living in such a group we can make some reasonable assumptions about their houses that would otherwise be inadmissible. Outside the four walls of the house we must consider other living spaces available to the family, whether only a balcony large enough for a baby carriage or a yard big enough for a playground.

To the extent that these are supplied, I am confident, the house can be relieved of functions it must otherwise accommodate. The house, more and more, is the place where functions not taken care of elsewhere are accommodated.[1]

These functions are essentially related to the surviving economic functions of the family, its cooking, laundering, and the like; to the personality development and acculturization of the coming generation; to the social, familial, and leisure pursuits of individuals and the family as a whole; and to maintenance of the house, equipment, family possessions, and grounds. If we consider these functions one by one and give them separate provision in an ideal house, the space requirements would be staggering. Functions also conflict. In the final house plan these conflicts are resolved to the extent they are understood, and to the extent such resolution is possible. It is at this point the designer seeks information that will help him understand family life. In the final house plan spaces are designed for multi-functional use. The laundry serves as a playroom, for example. Increasingly such flexibility has led to the concept of the house as a pattern of spaces rather than a collection of rooms. More emphasis is given to dual purpose rooms, and dual purpose furniture. Space conservation also leads to lightweight furniture that can be moved easily, folded or stacked for storage, organized for specific activities. The standard bridge table and chairs, or the folding bed, are obvious examples of a trend that is deeply rooted and likely to continue. Unfortunately people's habits, ideas, ideals, and even their possessions are by no means up to the level they will attain, and too many houses have been built in which good living is possible, but in which families undeniably are not living well. Education as well as design is important in a program of family living in relation to modern homes, and this will become more important rather than less.

The growth of the family in numbers, as children are added, can often be matched by a program of expansible houses. A number of constructive proposals have been made lately on this point, notably the series of house designs published by the Housing and Home Finance Agency and those sponsored by *Parent's Magazine*. Further study is needed here, particularly in the lower-priced dwellings. We must also face the problem of the contracting family, a problem made more serious by the lengthening span of life that now leaves an expectancy of fifteen years after the last child has left the home.

Our greatest difficulty, I believe, is the failure to recognize the differing housing needs of individual families. These vary most obviously at different stages of the family's career. But they also vary greatly between income groups. I was fascinated recently by a small study made by Dr. Virginia Cutler of the Cornell University Home Economics Department, where multiple choice questions were offered fifty cooperating families. The results showed a consistent pattern of homogeneity within each of three income groups, rather as the Kinsey report came to similar conclusions. But the data also showed wide variations within each income group, and these are the more important. If we are to have satisfactory housing, it means housing satisfactory to individual families, not averages or "statistical families." It will always be impossible to give each family the perfect home, but I am convinced we can do a great deal better than giving all families the same home. Before we can, we need to know more about different types of families and housing requirements.

[1] Lawrence Frank.

As a program for the immediate future, before we have learned a great deal more than we know now, and one for the ultimate future when much more has been learned, I believe we must place our chief reliance on encouraging talented designers of homes to apply themselves to these problems. One too easily forgets the great voluntary contribution that architects have made to past housing, and one is also prone to forget that it was in the most important cases a contribution motivated by a sense of public service and civic obligation and individual generosity that cannot be counted upon to furnish all that we need. Greater efforts must be made to draw talented designers into association with housing research, to identify and train promising younger men, to select architects for housing projects with greater care than has been the case in the past—and with less insistence on long experience and local residence— and to recognize work of quality where it has been achieved. I strongly commend the program of experimental housing inaugurated by the Federal Works Agency's Housing Division under Clark Forman in the early years of the war, and subsequently abandoned. The work of the Public Housing Authority's architectural advisory committee was of value far beyond its cost to the government, and should be continued and strengthened. Perhaps most important, some way must be found to finance research in this field to allow men of promise to devote their energies fully to the solution of such problems at least for limited periods of time.

I am aware that it is cheap advice to say that problems can be solved if enough clever people can be induced to work at solving them, and that I am convinced that our greatest failures in the past have come about through employing people of mediocre talent when better ones were clearly available. And I am convinced we *can* do better than that.

By G. HOLMES PERKINS*

AT home in Cambridge, Massachusetts, editorial writers flaunt before our less fortunate neighbors the virtues of Plan E and the achievements of our city manager. Taxes decline while those of other cities rise; today Cambridge is the only city in the Commonwealth with a lower tax rate than before the war. Services are infinitely better. The planning board, which not many years ago was expected to operate on $100 a year, now is actively supported. Recommendations have been made for an adequate playground and park program which will some day add 120 acres of open space; additional industry and business have been encouraged to locate in town in order to insure prosperity and, indirectly, more revenue to the public treasury; the city manager has sponsored sound and daring plans for arterial highways to relieve congestion from our main centers; and he has snatched the leadership in providing veterans' housing by applying for 2,000 apartments under the new state-financed housing program.

My heart tells me to applaud such energy, efficiency and social consciousness. He must be stone hearted and an exceedingly bad politician who would deny the children their play, to taxpayers reduced burdens and better services, or to veterans their sorely needed homes. Yet in this apparently utopian setting questions for which I have no answer rise

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to taunt me and also, I think, the whole planning profession.

Here are some of them. For the sake of ease of discussion I will attempt to group them under two major issues. New industry and business have been urged to settle in Cambridge and this has resulted in the normal chain of consequences. Sites bordering the river which should have been dedicated to parks have been given to business and industry in hopes that a lower tax rate would result through a maximum increase in assessed values with the minimum increase in services. More jobs have been created—but not for Cambridge people. The new workers stream into the city in cars and buses, adding to the already acute congestion; more trucks rumble through our residential districts to reach the new plants; parking becomes even more difficult, and more people travel farther and more often. Certainly there are advantages to industry and business in locating in Cambridge. Yet no matter how attractive our city may be, I do not delude myself by thinking that it is the best and only location for new activity. If we are to make valid plans we must know what businesses and industries benefit by each type of location: some need the waterfront, some a railroad siding, some are footloose; we must know the sizes and character of clusters which bring economies in servicing; we must know when and in what quantities we can provide jobs as parts of neighborhood units or small towns; and we must know those industries which by their character and size need to draw on huge populations for their workmen, for these cannot be served by a neighborhood or a medium-sized town.

But how does this affect the housing? Surely the crisscrossing of our paths from home to work has resulted in enormous social and economic waste—yet so far we have been able to afford it and within limits it gives advantages in choice of job and place of living. In metropolitan Boston we estimate that each person makes more than 750 trips a year by car or transit, while in our dormitory suburbs the number rises to about a thousand. On the other hand, if jobs and homes could be brought together in new clusters these trips could be cut to less than half. Nor does such a plan, as some will object, mean a return to a medieval anchoring of man to the land nor to a single choice of job. Clusterings of jobs and industry there will be. It is our duty to find the patterns—small, medium, and large—which, related to similar groups of housing and amenities, will produce the most pleasant environment and be most economical in function.

The second issue stems from that starry-eyed but debatable decision to request 2,000 veterans' apartments for Cambridge. I have not the slightest doubt there is a need for many times that number of good houses. But the Greater Boston Development Committee has just told us we have but 38 acres of vacant land suitable for housing. Our park and playground program needs 120 acres and three-story housing will need another 100. The land cannot be found in Cambridge. If not in Cambridge, where should it be sought and how should it relate to jobs, schools, parks, and shops?

I have hopes that we can, through our research, develop principles of location and city growth which can be supported by facts rather than by opinions or at worst by prejudice. I would have our social scientists propose and test new hypotheses which are related to the specific problems of the architect who must deal in concrete and in tantalizingly precise terms. His deeds are there to stay in brick and mortar. His patterns will affect the lives of generations; his architecture can prove costly if it promotes

social disorder and imposes unnecessary financial burdens. But he has not been without vision.

Near here in Madison you have a tardily-honored prophet. Yet I know of no studies which have analyzed and tested his proposals for new living patterns. The same can be said of Le Corbusier's vertical garden city. As architects we have attempted to insist that we must build these experimental cities, as we did the garden city of Howard, before we may find conclusive evidence of their strengths and failures. But I am convinced that you already possess research methods which will reduce the waste involved in any premature building of these visions. Can we not, following the lead of Clarence Stein, measure the cost of operating new towns of various size—though I find some of our administrators curiously reluctant to undertake such studies. What is the economical size for our new towns? Similar studies which measure not only financial costs but social values are needed to guide us in visualizing better industrial, shopping and housing patterns. We have earlier in this conference debated the neighborhood concept, but there we also find opinions and few facts. For my own enlightenment, I wish the social scientists would put together the work already done in sociology, social psychology and anthropology which has a direct bearing on the various issues involved in neighborhood planning and the relation of jobs to home.

Through the haze of indecision and lack of knowledge I see clearly two facts in which I put my trust: The first is that there will be and must be continuing and dramatic changes in the form of our cities, which we cannot predict or anticipate; the second, that people will always differ in the type of houses, amenities, and pleasures which they want. For these differences and for an evolving, rather than a static culture I am profoundly grateful. Perhaps for these reasons I have less fear of error were we to build some of our dreams for though I am certain that none will prove to be the universal panacea, I am equally confident that there will be those in this strange world who will delight in them.

I would have us build, as trial balloons, not one but many of the prophetic plans we already know so well. A new town movement in this country deserves our wholehearted endorsement and support for the results would become our finest laboratory. Public funds thus spent would be most rewarding. And if such experiments should tend to suggest that public ownership of land be desirable, we must be prepared to examine objectively the advantages of and objections to such a public policy.

Over all the issues raised hovers the specter of metropolitan government. In Boston, where metropolitanism is so hoary with age and apparent respectability, one might have hope of success, but despite our recent contest no results are yet forthcoming. For myself I wonder whether we must not devise and test some method of retaining in our local community, or perhaps best of all in our neighborhoods, a large measure of political responsibility before we take the plunge. This becomes more strikingly necessary as metropolitan government grows more impersonal and distant.

Let us look back at Cambridge for a moment. I hope you have not formed the opinion that our city is worse off than most. That would be farthest from the truth despite the tragic dilemmas posed by our good intentions. If we would be of real service to those who must spend the public funds, we must have some answers to these basic questions.

By ABNER D. SILVERMAN*

NEEDS and standards for large housing developments of community size are usually subdivided into neat compartments concerning physical aspects of planning, health requirements of tenants, educational requirements, shopping, religious, cultural and economic needs of the residents. Specifically, such matters as the presence or absence of a safe water supply, freedom from flooding, the presence of sanitary and adequate means of disposing of sewerage and garbage, distance of satisfactory elementary and high schools, medical services, parks, playgrounds, etc.

The inference in these standards is that unless all of these conditions are met, the site is unsatisfactory for residential development.

As a matter of fact, few, if any, really large-scale developments are ever built in areas which meet these standards because (a) difficulty of land assembly, and (b) land costs which drive the developer, either a private or public agency, to peripheral land.

Actually, the development must grow and, in its growth, establish these good characteristics, rather than be located where these conditions are found.

This calls for some reappraising of the basis for the standards; i.e., schools where reliance must be placed upon existing facilities or temporary facilities involving bus transportation, rather than on an arbitrary ¼ to ⅓ mile radius.

In addition, there are many areas in which standards are necessary, but have not been adequately formulated. For example, shopping areas: current standards are comfortably vague, i.e., sufficient essential shopping facilities are from 9 to 5 square feet of store area per person. Present standards are vague because they deal in the abstract while the developer is interested in specific locations and may be influenced in his decision as to the quantity and type of commercial space by such factors as the suitability of commercial areas as a district shopping facility rather than as a project shopping facility. He finds himself usually between two equally difficult limits (a) the over-production of commercial space, or (b) a failure to provide enough residents needs or, from the standpoint of the consumer, if his land holdings are sufficiently extensive he has an excellent chance to create monopolies. On the whole, this area needs clarification and reanalysis.

Beyond any question of physical planning, there is a whole field of standards which are needed for the management of such developments which ought to be based on guides established by those who are expert in group action and reaction. For example, is tenant maintenance of lawn areas in row-house development an established American custom? Can outside drying be eliminated without violating the household "gods" of housewives? How does one go about the development of community pride and those associative interests that lead to the promotion of nursery schools, effective P.T.A., excellent school systems, and that pride of residence that gives a new community its permanent community atmosphere?

To the manager of large-scale communities these are not idle inquiries. They have real cash values. In the past, management has had to provide facilities and develop community spirit by either fostering associations of tenants along the lines of their common interests in leisure time activities or, more broadly, by forming community councils to work with the manager on matters of general concern to the entire community. To some ex-

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tent, past experience with large scale developments indicates that the provision of facilities before a real demand exists on the part of the residents, actually inhibits rather than encourages such group association.

These are areas which need observation and systematic analysis so that procedures and methods can be formulated which will aid new managers in meeting this two-fold community responsibility; that is, (a) to control individual action so that the property or community is not injured and (b) to promote civic spirit so that by group action the potentialities in terms of decent living are achieved by the families living in the physically well-planned developments. To date, there is little reliable data outside of the public housing field on these questions and that data may be invalid for privately-owned developments because of the different economic and cultural levels of the residents. In the past, too much has depended upon the personality and sensitivity of the manager, and too little has been established as work methods of general applicability.

Abstract of Floor Discussion

on Housing Needs and Housing Standards

THE determination of housing needs must stem, not only from the sources indicated in the prepared papers, but from the equally vital research of other disciplines. For example, home economics can contribute pertinent information about these needs in the form of data scientifically determined from extensive tests and analyses. Likewise, specialists in the field of public health are in a position to discover important needs arising from their studies of what contributes to physical and mental well being.

The formulation of standards established with relationship to housing needs often is affected by factors only indirectly related to needs, *per se*. The translation of housing needs into legislation aiming at their satisfaction, for instance, is a process which is not yet well understood. It sometimes happens that a wide gap remains between legislation directed toward meeting housing needs and the housing needs themselves. We need to know more about what accounts for the differential. Such legislation, even though well intended, may easily become so delimiting and inflexible that it interferes with practicable solution to the design of proper housing and satisfactory environment in specific situations. Research is needed to provide legislators with principles and provisions which can be written into laws for the sake of meeting special circumstances, as in the case of demonstrated feasibility of modifying minimum street width requirements under special topographic conditions.

Another example of factors which contribute to disparity between housing needs and their satisfaction is the prevailing climate of political opinion regarding housing. There is genuine need for further study of the politics of housing, for it is in the political theatre, in action areas, and in policy making, that alternatives are presented for public consideration and that measures for effectuation of housing programs are secured. The effect of political activities on the housing market itself is a related subject meriting additional research.

The characteristics of housing standards include several shortcomings which might be corrected partly through further research. It is notable, for instance, that standards tend to be negative in nature—sometimes even coming to be equated with minimum levels for conformance, rather than optimum levels. These negative attributes easily lead to the pitfalls of uniformity and monotony—all subdivisions, for example, tend to look alike, regardless of site or orientation potentials. Thus, in viewing present standards one is

impressed with the need for encouragement of inventiveness if the dead level of mediocrity we now possess is to be left behind. Assuming some kinds of standards are essential, however, the problem remains to make those standards approach the optimum insofar as possible, but including provision for a fresh approach to treatment of specific situations.

The arbitrary nature of housing standards arises in some degree from the fact that it is not always possible to determine standards scientifically. Therefore some decision has to be made in the designation of "the" standards selected from among a wide variety under consideration, some of the standards being similar, some possibly even contradictory! The social scientist's role, in terms of the use of his research pertinent to the suitability of these various standards, might well be the furnishing of principles helpful in guiding this necessarily arbitrary selection of "the" standards.

Basic to all of these considerations, of course, is the determination of an optimum of balance among the standards deemed significant to the various groups interested in housing. There must be a reconciliation of the standards held important from the point of view of the occupants, the builders, the materials manufacturers, the craftsmen building the house, and the officials concerned with public health and safety—to mention only a few of the groups justifiably having an "interest" in housing. Research on a scale far more extensive than now obtains must be undertaken before the weight which should be assigned to the standards of these diverse interests can be discovered. Once that stage has been reached, this optimum of balance must somehow be reflected in the public policy and planning pertinent to housing and its environment.

Concluding Statement by Chairman Richard U. Ratcliff

IN the planning of this Symposium on Frontiers of Housing Research certain objectives were in mind. It was the intention to provide an occasion for sophisticated discussion of housing research problems. We hoped to stimulate a broader basis of interest in housing research on the part of scholars and administrators. It was an objective to set the stage for more effective coordination and collaboration among research workers in this field. We hoped that these sessions would result in a clarification of basic concepts and issues which would be of value in the definition of housing research areas. From my standpoint and from the standpoint of the sponsoring groups, it is clear that our objectives in large part have been reached and that our mission has been accomplished.

In the course of these sessions there have been a number of admissions of inadequacy by our participating colleagues. We need not be disturbed by these admissions; rather, we should be encouraged by the proper modesty which has been evidenced for it is an indication that we have passed through the positiveness of intellectual adolescence.

There are those who have here expressed an impatience with the slow progress in the field of housing research and with the absence of immediate and positive answers. I do not share their impatience nor do I decry it, for a sense of urgency is healthy and refreshing. But we must see in full perspective the complex problem of slowly pushing backward the frontiers of knowledge. We stand here tonight on a pinpoint of time in the never-ending evolutionary process of building a body of knowledge of housing phenomena. It is a laborious task where patience and persistence are as well rewarded as brilliance.

On behalf of the sponsoring groups, the Committee on Housing Research of the Social Science Research Council, the University of Wisconsin Committee on the Regional Planning Course, and the University of Wisconsin Centennial Committee, may I thank you all for your interested and productive participation. I declare the Symposium on Frontiers of Housing Research to be now adjourned.